THIS WEEK'S National Petroleum NEWS

Coming Meetings

American Petroleum Institute, Mid-Year Divisional Meetings, Mayo Hotel, Tulsa, June 1, 2, 3.

Society of Automotive Engineers, White Sulphur Springs, W. Va., June 12 to 17.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 17.

American Society for Testing Materials, Atlantic City, N. J., June 20 to 24.

National Petroleum Association, annual meeting, Atlantic City, N. J., Sept. 14, 15, 16.

American Gas Association, Atlantic City, N. J., Oct. 10 to 14.

American Petroleum Institute, annual meeting, Houston, Tex., Nov. 15, 16, 17.

Rocky Mountain Oil and Gas Association, Rainbow Hotel, Great Falls, Mont., December (dates not set).

1933

National Petroleum Association, Cleveland Hotel, Cleveland, O., April 20, 21.

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Retracing Steps to Profits

IF THE present unsatisfactory conditions in the marketing branch of the industry are to be righted it will be by retracing the steps taken in arriving at the present situation, W. T. Holliday, president of the Standard Oil Co. of Ohio and vice-president of the American Petroleum Institute, told the institute in an address before the marketing division at Tulsa this week. Turn to Page 25 for his analysis of how the return trip should be made.

Oil Company Headquarters

The Pure Oil Company

AN OLD Italian monastery inspired the exterior, entrance, lobby and towers of this 40-story Pure Oil Bldg. at 35 East Wacker Drive, Chicago. It was formerly the Jewelers Bldg., meant to be a jewelry mart, but since The Pure Oil Co. became an occupant, renting six floors, it was rechristened in its name. The Pure Oil does not own the building.

There is an automatic garage in the building, probably the first of its kind in the country.

When completed in 1925, the building was the tallest west of New York City and remains today one of the tallest in Chicago. It faces Chicago river and skirts the edge of Chicago's famous loop district at the back. Double-deck Wacker Drive which runs along the river is visible in the foreground.

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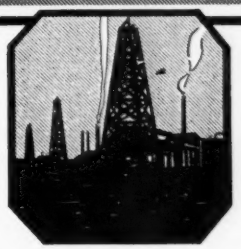

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Federal Estimate is 6.2% Decline In Total Motor Fuel Demand

TULSA, June 1

DECLINE of 6.2 per cent in demand on American refiners, motor fuel blenders and importers is forecast for the last nine months of 1932 by the volunteer committee on petroleum economics of the Federal Oil Conservation Board. This decline is from the actual demand in the last nine months of 1931.

The estimate covers both domestic and export demand. The voluntary committee estimates domestic demand decline at 5.4 per cent and export demand decline at 14.1 per cent. Decline in crude oil demand is estimated at 65,990,000 barrels, or 9.64 per cent.

Amos L. Beaty, president of the American Petroleum Institute, in his address opening the institute's mid-year convention here, urged that refiners figure on a total decline of 15 per cent in motor fuel demand over the remainder of 1932. It is the opinion here of observers of the gasoline situation that it will be a great deal better for refiners to work at present on the basis of a high rate of decrease in demand this year from last year's demand.

If operations of refineries are carried on under the idea that the rate of demand decrease will be high this year, the gasoline situation can be held on a firmer foundation than if the idea pervades operations that consumption this year will be near last year's level, it is pointed out.

The accompanying table shows how the voluntary committee apportions the domestic and export demand and the sources of the motor fuel and crude oil.

The institute's advisory committee on statistics will announce its estimate later in the meeting here.

Total export and domestic demand for motor fuel the last nine months of this year is estimated by the federal committee at 337,000,000 barrels. Domestic demand is estimated at 307,500,000 barrels and export demand at 29,500,000 barrels. The decrease in domestic demand from last year's consumption is 17,557,000 barrels and in export demand 4,832,000,000 barrels. Total estimated decrease is 22,389,000 barrels.

The federal committee was headed by Dr. John W. Frey of the petroleum sections minerals division, Bureau of Foreign and Domestic Commerce. Its other members were: Martin Van Couvering, petroleum engineer, Los Angeles; Howard Bennette, Western Petroleum Refiners Association; Clarel B. Mapes, Mid-Continent Oil and Gas Association, and Sidney A. Swensrud, Standard Oil Co. of Ohio.

The committee in its report to Secretary Wilbur of the Interior department, chairman of the Federal Oil Conservation Board, said it weighed the factors controlling gasoline demand and found them to have retrograding characteristics. It found in-

Prepare For Heavy Decline In Gasoline Demand

TULSA, June 1. — The estimate of gasoline and crude oil demand for the nine months from April 1 to Dec. 31, 1932, of the subcommittee on economics of the American Petroleum Institute is being laid before the institute's directors today and will be presented to the A.P.I. convention for general discussion June 2.

It is understood the subcommittee's estimate checks closely with that of the Federal Oil Conservation Board's voluntary committee but that it points out there are various factors which cannot be defined but which make it necessary for the oil industry to prepare itself for a decline in consumption even greater than the estimate.

dications that automobile registrations in 1932 would be approximately 1,000,000 vehicles less than in 1931.

It reported that general unsatisfactory economic conditions throughout the world forecast further curtailment in the use of both commercial vehicles and personal cars; that the ratio of registered commercial cars to total motor vehicles registered is probably greater than the ratio of commercial vehicles in use to total vehicles in use. In other words, many commercial vehicles are laid up.

The committee foresees less extensive use of vehicles than in years past; vacation trips will be shorter and the number of vacation and week-end trips fewer than in the past few years. This will lower the usual summer peak of domestic consumption of motor fuel. The committee considered the increase in the number of cylinders in the new cars but believed this factor would not overcome the curtailed use of the vehicles themselves.

"The committee has concluded," it reported to Dr. Wilbur, "that the principal factors causing the export demand for motor fuel to assume a pronounced downward trend will continue in effect during the period under consideration; but that the rate of decline in exports will be reduced due to the fact that the causative factors of decline have almost exerted their full effect. The decreased purchasing power of foreign consumers and the pressure of competition from foreign motor fuel producers, together with foreign agreements concerning the source of supply, will continue to be the major factors influencing a decline in export demand."

The committee estimated imports at 8,700,000 barrels, a decline of 1,026,000 barrels, or 10.5 per cent, from the corresponding period in 1931. It attributed the unusually heavy imports of the early months of 1932 to the possibility of an import tax. It regarded those imports as a translation of stocks from foreign to domestic storage. It does not expect the same rate of importation to continue through the rest of this year. It predicted that if the import tax is imposed that imports will fall to a low level or possibly cease.

"The required domestic supply of motor fuel, in line with the above considerations, is therefore estimated to be 328,300,000 barrels, a decrease of 21,363,000 barrels or 6.11 per cent below the corresponding period in 1931," the committee reported.

"Careful consideration has been given to the evident tendency of the refinery industry to produce motor fuel with high anti-knock qualities, and it was concluded that this tendency will be stronger during the remainder of 1932 than in past months and that greater relative yields of cracked gasoline will be realized during the period under consideration. In line with this conclusion, it is estimated that the production of cracked gasoline will approximate 46 per cent of the gasoline manufactured from crude oil run to stills and will total 129,000,000 barrels, a decrease of 7,844,000 barrels or 5.7 per cent below the same period in the preceding year. Therefore the straight-run gasoline which will be produced will be 18,493,000 barrels or 10.8 per cent less than in the

(*Continued on page* 14)

Federal Oil Board's Estimate of Motor Fuel and Crude Requirements

(Covering Nine Months, April to December, 1932, Inclusive)

MOTOR FUEL

DEMAND	1932 (Barrels)	1931 (Barrels)	Increase or Decrease Barrels	Per Cent
Domestic	307,500,000	325,057,000	—17,557,000	— 5.4
Export†	29,500,000	34,332,000	— 4,832,000	—14.1
Total demand	337,000,000	359,389,000	—22,389,000	— 6.2
SUPPLY				
Straight run gasoline	152,850,000	171,343,000	—18,493,000	—10.8
Cracked gasoline	129,000,000	136,844,000	— 7,844,000	— 5.7
Nat. gasoline produced and run to stills	22,000,000	25,706,000	— 3,706,000	—14.4
Refinery Production	303,850,000	333,893,000	—30,043,000	— 9.0
Other natural gasoline produced	5,000,000	5,441,000	— 441,000	— 8.1
Benzol	1,000,000	1,379,000	— 379,000	—27.5
Total production	309,850,000	340,713,000	—30,863,000	— 9.1
Supply from storage:				
Refinery stocks	15,220,000	8,767,000	+ 6,453,000	.....
Other stocks††	3,230,000	183,000	+ 3,047,000	.....
Total domestic supply	328,300,000	349,663,000	—21,363,000	— 6.1
Imports	8,700,000	9,726,000	— 1,026,000	—10.5
Total supply	337,000,000	359,389,000	—22,389,000	— 6.2

SUGGESTED LEVEL OF MOTOR FUEL STOCKS

	Refinery Stocks (Barrels)	Other Stocks†† (Barrels)	Total Stocks (Barrels)
March 31, 1932 (Actual)	47,220,000	19,730,000	66,950,000
June 30, 1932	40,000,000	19,450,000	59,450,000
Sept. 30, 1932	27,500,000	17,450,000	44,950,000
Dec. 31, 1932	32,000,000	16,500,000	48,500,000

†Including Shipments to Non-contiguous Territories.

††"Other Stocks" include Motor Fuel Stocks in terminals, in transit, in pipe lines, and natural gasoline at refineries, at plants, and blends at plants.

CRUDE OIL

DEMAND	1932 (Barrels)	1931 (Barrels)	Increase or Decrease Barrels	Per cent
Crude run to stills	622,000,000	685,436,000	—63,426,000	— 9.26
Crude used as such	10,000,000	13,441,000	— 3,441,000	—25.60
Domestic consumption	632,000,000	698,877,000	—66,877,000	— 9.57
Exports	20,500,000	20,331,000	+ 169,000	+ 0.83
Total demand	652,500,000	719,208,000	—66,708,000	— 9.28
SUPPLY				
Domestic production†	611,875,000	654,500,000	—42,625,000	— 6.51
Imports	33,650,000	34,368,000	— 718,000	— 2.09
New supply	645,525,000	688,868,000	—43,343,000	— 6.29
Drawn from storage	6,975,000	30,340,000	—23,365,000	—77.01
Total supply	652,500,000	719,208,000	—66,708,000	— 9.28

†Daily average production 2,225,000 barrels for last nine months—275 days.

THE EDITORS' VIEWPOINT

Decline In Gallonage Need Not Endanger Profits

THE decline in gasoline gallonage the oil industry will face the rest of 1932, and possibly longer, be it the 6 or 7 per cent decrease the economics committees reported this week at Tulsa, or even larger, does not mean that the oil companies must endanger profits for the rest of the year.

The oil industry has been fortunate above almost all other industries in holding the volume of its business during the depression. Many lines of business are carrying on with a much larger reduction in volume than the oil industry will be called upon to face.

The situation today does call for an energetic application **at once** of this yardstick of future business provided in the reports of the economics committees, by the individual refining and marketing executive, to his own business, be it large or small.

There are more uncertain elements in the situation today than the oil companies have faced during the periods in the past in which these economic reports have been issued for their guidance. The oil industry and government statisticians who are members of the committees, after some weeks of study of the future, have come to general agreements on a decline in total gasoline demand the rest of the year of between 6 and 7 per cent.

Many oil company executives believe the situation has changed since the figures in the reports were prepared. It is certainly capable of change in weeks to come, and changes beyond the power of the members of the committees to put into estimated figures. President Beaty, of the American Petroleum Institute, at Tulsa estimated the decline in gasoline gallonage the rest of 1932 may be nearer 15 per cent.

Again, the change in the volume of the markets which companies so far individually have experienced, varies greatly, making another element of uncertainty in the situation. In some sections, particularly in the East, some companies have enjoyed an increase in their volume of domestic gasoline sales. Other companies, in other sections, are now experiencing decreases of as much as 18 to 20 per cent in gasoline. Other companies are entirely without stocks and are buying gasoline to meet their needs.

Obviously, however, every company marketing gasoline must give heed to the fact that the industry faces a decrease in consumption the rest of the year, in its own operations.

How the company executives may apply the yardstick of the economics committees to their own operations is a problem each must work out. About the only general rule that seems to apply is that no company may take business which it can obtain only through sales methods that hurt the industry.

The refining and marketing executive should study his own gasoline business in relation to that of other companies in his territory; he should study the trend of business in his territory with that in other territories. After establishing what he can consider the volume of his possible business, were demand to remain as it is, then he should apply the estimate of decreased demand to come which the committees have given.

To play safe the industry could well take the largest estimates of decline in volume which have been given. It can make up a shortage much easier than it can work off a surplus developed through not taking seriously enough the estimates of declining volume.

The situation is uncertain and it calls for drastic action. However, the industry's price structure is such today that it can curtail to whatever extent declining business calls for and still enjoy a profit for the year, but heeding the present storm warning is the only way in which a profit can be insured to oil companies as a whole.

• • •

Court Decision Supports Unit Development Idea

THE recent decision of the U. S. Supreme Court in upholding the law under which proration is enforced in Oklahoma adds considerable backing to the efforts of the American Petroleum Institute to develop a program by means of which the unit development of oil pools can be put into effect.

It will be recalled that the institute directors, since Dec. 3, 1929, have had this subject under official consideration. Then a policy of unitization of oil pools was endorsed and recommended to the industry, as a means of conservation of oil and prevention of waste attendant on over-production. Various committees and groups have had the subject under consideration and it has continually been a live topic for discussion.

About a year ago, institute directors further

authorized a polling, by letter, of executives with oil producing companies to see if they would go on record as agreeing to put unit development of oil pools, in place of the highly intensive and wasteful competitive drilling, into effect whereever practical. The vote, while never announced, was said to be greatly in favor of unit development methods.

At its last annual meeting, the institute directors went still further and endorsed the principle of common ownership of gas energy in the ground in oil fields, as a means of most efficient recovery of the oil. "That it endorses, and believes the petroleum industry likewise endorses, the principle that each owner of the surface is entitled only to his equitable and ratable share of the recoverable oil and gas and gas energy in the common pool, in the proportion which the recoverable reserves underlying his land bear to the recoverable reserves in the pool," reads its resolution on the subject. A committee was appointed to prepare a program for putting this principle into practical operation through unit operation plans. It has not yet announced its program.

Now says the highest court in this country, on this subject of the common ownership of energy of gas in the ground in the production of oil found there:

"In Oklahoma, as generally elsewhere, land owners do not have absolute title to the gas and oil that may permeate below the surface. These minerals, differing from solids in place, such as coal and iron, are fugacious and of uncertain movement within the limits of the pool.

"Every person has the right to drill wells on his own land and take from the pools below all the gas and oil that he may be able to reduce to possession, including that coming from land belonging to others, but the right to take and thus acquire ownership is subject to the reasonable exertion of the power of the state to prevent unnecessary loss, destruction or waste.

"And that power extends to the taker's unreasonable and wasteful use of natural gas pressure available for lifting the oil to the surface and the unreasonable and wasteful depletion of a common supply of oil and gas to the injury of others entitled to resort to and take from the same pool."

If there are still executives with production companies who question the legal status of their participation in a unit development program, it would seem that this court decision establishes a definite principle in this regard, since only through unitized operations can the rights of all surface holders in an oil pool to the lifting energy of the gas underground be protected.

Federal Estimate

(*Continued from page* 12)

same period in 1931 and will total 152,850,000 barrels.

"To produce the above amount of straight-run gasoline, it is estimated that the required runs of crude oil to stills will total 622,000,000 barrels, and that the recovery ratio of straight-run gasoline will approximate 24.57 per cent. In comparison, the recovery ratio for the same period in 1931 was approximately 25 per cent but the committee concluded that the effect of the practice of cracking distillate and the production of reformed gasoline would cause the recovery ratio to be lower for the period under consideration. Therefore this estimate anticipates that, in comparison with the preceding year, there will be a decrease of 63,436,000 barrels or 9.26 per cent in the amount of Crude Oil Runs to Stills.

"It is estimated that crude oil used as such will decline 25.6 per cent, or 10,000,000 barrels. It is anticipated that the exports of crude will not change materially from the exports of the same period last year and will probably total slightly higher, amounting to 20,500,000 barrels. Thus the total demand for crude oil is estimated to be 652,500,000 barrels, a decrease of 66,708,000 barrels or 9.28 per cent below that of the corresponding period in 1931.

"In considering the imports of crude oil, the committee has approached its estimate in approximately the same manner that it did in studying the probable imports of motor fuel, with the added factor that whether or not an excise tax is imposed, the committee has no reason to believe that there is any justification for a continuance of imports of crude oil in the same relative magnitude as that which has been experienced in the past few months. Thus, the committee has estimated that the imports of crude oil will be 33,650,000 barrels, or approximately 5.15 per cent of the total required supply of crude oil.

"The Committee therefore estimates that the required domestic supply of crude petroleum will be 618,850,000 barrels, as compared with 684,840,000 barrels required during the same period in 1931, a decrease of 65,990,000 barrels or 9.64 per cent. This total amount will be required from production and storage, and will average approximately 2,250,000 barrels per day over the period.

"However, in studying the probable demand for this crude oil by months, it was apparent that during the period from April to June inclusive, the daily average demand would probably approach only 2,200,000 barrels per day, while in the last quarter of the year, the period in which the anticipated developments are most problematical, the daily average requirements of domestic crude supply would approximate only the daily average computed for the entire period.

"Accordingly, in the best interests of conservation and the economic welfare of the industry, this committee suggests that the oil industry adjust itself to an approximate production of crude oil averaging 2,225,000 barrels daily for the entire nine-months period under consideration. If the fullest anticipations of demand for both motor fuel and crude oil, as now estimated by this committee, are realized, a reduction in crude oil stocks of 6,975,000 barrels will be accomplished."

Texas Truck Law Favoring Rails Upheld by Highest Court

WASHINGTON, May 31

STATE legislatures have power to regulate motor vehicles so as to divert traffic to the railroads. This the Supreme Court of the United States decided unanimously in the Texas weight law case and the Kansas ton-mile tax case. The opinions, written by Chief Justice Hughes, held irrelevant the argument set up that the laws, particularly that of Texas, were discriminatory in favor of the railroads.

The Texas law provided for a maximum pay load of 7000 pounds. In the case of gasoline, a maximum load of 1129 gallons is all that is permitted. This maximum load applies to single vehicles or trains. The weight limitation applies to loads outside incorporated cities and has one general exception: that in case a load is being hauled from the point of origin to the nearest receiving or loading point of a common carrier or when being hauled to the destination from the nearest unloading point of a common carrier, that the payload weight limit may be 14,000 pounds. This hauling at the double weight must be over the "shortest practicable route."

There are a few special exceptions when the double weight limit may be used, such as when uneconomic dissembling would be required to meet the normal weight limit, and when the distance from a point of origin to destination is less than the distance from the point of origin to the nearest common carrier loading point.

Lengths of vehicles are limited to 35 feet and trains to 45 feet with the exception that in hauling to railroads, or under special permit, overall lengths may be 55 feet. Widths are limited to 96 inches and vehicles with load to 12.5 feet.

Since this law was upheld by the court a similar law has been introduced in the Louisiana legislature.

The Kansas law levied a ton-mile tax on vehicles hauling beyond a 25-mile limit outside municipalities. It was imposed on private carriers as well as on public and contract carriers. The three classifications of carriers were as follows: public—motor vehicles hauling between fixed termini or over fixed routes; contract—vehicles hauling for hire; and private—those hauling the goods of the vehicle owner, such as gasoline or oil by the oil companies.

The test of the law was made by three baking companies.

The limitations of the Texas law conform to the current recommendations of the National Motor Vehicle conference as to width, height and length of single vehicle. The conference favors 65-foot lengths for combination vehicles or trains. The conference recommends weight limitations of 18,000 pounds per axle when the vehicle is equipped with balloon tires, and 16,000 pounds per axle with high pressure tires. It recommends use of solid tires only under permit. The conference calls these limitations minimum maximums; that is, no state should impose limitations less than these figures.

The motor vehicle conference is composed of the National Automobile Chamber of Commerce; American Automobile Association, National Automobile Dealers Association; Motor and Equipment Association; Rubber Manufacturers' Association; National Association of Motor Bus Operators, and Society of Automotive Engineers.

Concerning the doubling of the weight limit in favor of hauling to and from railroads, Chief Justice Hughes said in the Texas decision:

"It is said that the exception was designed to favor transportation by railroad as against transportation by motor trucks. If this was the motive of the legislature, it does not follow that the classification as made in this case would be invalid.

"The state has a vital interest in the appropriate utilization of the railroads which serve its people as well as in the proper maintenance of its highways as safe and convenient facilities. The state provides its highways and pays for their upkeep. Its people make railroad transportation possible by the payment of transportation charges.

"It cannot be said that the state is powerless to protect its highways from being subjected to excessive burdens when other means of transportation are available. The use of the highways for truck transportation has its manifest convenience, but we perceive no constitutional ground for denying to the state the right to foster a fair distribution of traffic to the end that all necessary facilities should be maintained and that the public should not be inconvenienced by inordinate use of its highways for purposes of gain."

THESE decisions, it is felt in Washington, give distinct answer to the theory that the states could not regulate private carriers, resulting from the condemnation by the highest court of loosely drawn statutes of California, Florida and other states.

California drew a statute compelling every truck using the highways to become a common carrier and making every common carrier obtain a certificate of convenience and necessity if and when the railroad commission might deem more truck service on a given road in the public interest. Florida tried, unsuccessfully, to make fish of trucks hauling one kind of lading and fowl of others hauling something else.

In neither Kansas nor in Texas was anything of that crude sort tried. Kansas simply put a high tax on private carriers and Texas limited the loads and sizes of trucks. The Texas litigants said that trucks carrying more than 7000 pounds of load could safely use the highways. The court said that that was something for the state legislature and not the courts to determine and that ordinarily the courts would not listen to engineers on the subject of how much of a load a road could stand, after the state had fixed a limit.

World Conference Still Talking Over Market Fundamentals

NEW YORK, May 28 FUNDAMENTALS are still being discussed at the International Petroleum Conference which has been underway more than two weeks at the Waldorf-Astoria hotel here, Charles E. Arnott, president, Socony-Vacuum Corp., informed the press. He added that once an agreement is reached on fundamentals, a superstructure of details can be quickly built up.

The international group in conference, made up of representatives of American, British and Dutch factors in the world market, is considering proposals made by the Russian group and the Russians are still considering the proposals of the international group, Mr. Arnott said. The International group is made up of the Socony-Vacuum, Standard Oil Co. (N. J.), Gulf Refining Co., The Texas Corp., Atlantic Refining Co., and Consolidated Oil Corp. (Sinclair).

The international group has a sub-committee which is working directly with the Russians. It is composed of Mr. Arnott, who called the conference together; James A. Moffett, Jr., Standard of New Jersey; R. I. Watson, Burmah Oil Co. and Shell Transport & Trading Co.; J. B. Aug. Kessler, joint managing director of the Royal Dutch-Shell; W. Fraser, Anglo-Persian Oil Co., and H. F. Sheets, Socony-Vacuum Corp.

Mr. Arnott said he was unable to predict when the conference might terminate. He is confident that some constructive measure that will stabilize the world petroleum market, will come out of the conference eventually. The Russians are showing a fine co-operative spirit, he added.

Although none of the conferees will reveal the nature of the fundamentals which are being discussed, it is the belief in the export market and those oil men who follow the export market closely that a cartel has been suggested to buy and market Russia's exported oil in a volume of about the size of that country's 1931 oil exports. The cartel would function for 10 years, it is said.

At the end of that time, it is believed that domestic demand in Russia will be of such size that the Soviet will no longer be an export nation. The country has the population to absorb more than the present volume of petroleum produced if its consumption were normal.

Indications that little trouble is expected in the future from Roumania are seen in the annual report of the Royal Dutch Co. this week in which review willingness of the Roumanians to participate in the Kessler crude production stabilization plan was reported. It is assumed that although the Roumanians are not represented by any of their nationals at this conference all the large foreign interests in their country are represented and may be empowered to speak for the Roumanian operators.

Court Restrains Ousting Of S. O. Indiana

(By Telegraph)

DETROIT, May 31. — A temporary order restraining Michigan authorities from closing service stations of the Standard Oil Co. of Indiana throughout the state, on account of a claimed unpaid gasoline tax bill of $1,500,000, was issued today in Federal court here by Judge E. A. O'Brien.

Hearing has been set for June 6, when the state must show cause against the court issuing a permanent injunction.

These legal proceedings are the climax of a difference of opinion held for some years by the Indiana Standard and Michigan authorities over the 3 per cent allowance for outage in the state gasoline tax law.

Frank D. Fitzgerald, secretary of state, announced May 27 that unless the Indiana Standard paid $1,599,815 in claimed back gasoline taxes he would close Standard's 1950 stations on May 31. Indiana Standard then went to Federal court for an injunction.

The point at issue is when the 3 per cent allowance shall be deducted. Indiana Standard has large storage terminals in Michigan and gasoline from these terminals is reshipped to bulk plants. The company has been taking the 3 per cent on shipments out of these terminals. Michigan authorities claim the 3 per cent should be taken on gasoline coming into the terminals.

Differences in taxes paid, and that claimed by the state, with interest and penalties for non-payment, amount to the $1,599,815 asked by the state. An audit of the company's books to March 31 produced this difference. After a conference between Indiana Standard and Michigan authorities, Standard refused to comply with the state's demands. Then Fitzgerald announced the closing of the stations unless the sum was paid in five days.

Indiana Standard has retained Alex J. Grosbeck, former Michigan governor, to assist its legal staff.

Senate Votes 1c Tax On Gasoline

By Telegraph

WASHINGTON, June 1.— Yielding to President Hoover's plea in person for more revenue, and action without further delay, to meet an emergency which he said had developed in the last few days, the senate this afternoon added to the revenue bill an excise tax of one cent a gallon on gasoline to be paid at the refinery. It is estimated to yield $150,000,000. The tax was opposed by Senators Thomas and Gore, Oklahoma, and Tydings, Maryland, but they made no particular fight because the necessity for it seemed to be admitted.

The situation with respect to the gasoline tax developed so suddenly that there was not time to formulate a plan of opposition if one were shown to be desirable in view of the need for revenue. The question of policy on that point can be determined when the bill goes back to the house.

Federal Court Begins Hearing of Attack On Proration in East Texas Field

By Paul Wagner
N. P. N. Staff Writer

By Telegraph
HOUSTON, May 31.

ON THE decision to be handed down by a three-judge federal court sitting this week in Houston will depend validity of Texas Railroad Commission orders imposing the present 59 barrels per well per day proration limitation on more than 5800 East Texas oil wells.

The net effect of the ruling on permanent injunction pleas will be to determine whether producer plaintiffs in the consolidated cases will be freed of railroad commission shackles or whether restraint may be more permanently enforced.

The railroad commission represented by Fred Upchurch, assistant attorney general, has cross proceedings before the court, and asks an injunction against violation of commission orders.

Regardless of the decision an appeal direct to the Supreme Court of the United States may be expected.

In the cases now pending attacks are made on railroad commission orders rather than on the conservation law against physical waste passed by the Texas legislature which the present group of Federal judges already has pronounced constitutional.

The same judges who ruled against Governor Sterling and his martial law regime have been hearing the present consolidated cases. The court is composed of U. S. Circuit Judge J. C. Hutcheson; Federal District Judges Randolph Bryant of Sherman, and William I. Grubb of Birmingham.

The producer plaintiffs are attempting to show that present limitations create an enormous waste of gas and through pinching methods cause wells to choke up with paraffin and thereby damage future production.

The railroad commission and supporting conservation proponents introduced testimony to show high oil withdrawals stimulate water encroachment under hydraulic conditions and thereby ruin some wells at present in addition to damaging future recoveries.

The present total East Texas allowable of 325,000 barrels daily was described by President Charles F. Roeser of the Texas Oil and Gas Conservation Association as too great to permit maintaining reservoir pressures in the field and thereby keeping up the maximum producing efficiency.

C. P. McGaha of Wichita Falls, operator and geologist, also warned against water flooding of the field by too high rate of oil withdrawals and W. F. Knoder, railroad commission engineer, told the court too heavy a production had already ruined a number of wells in the field.

J. H. CLARK of the Stanolind Oil and Gas Co., testified 60,000,000 barrels of East Texas oil was produced before the military shut-down last August and the reservoir pressure then had been reduced to approximately 150 pounds. Pressure decreases were described as much slower under proration.

David M. Lide of Shreveport, testified to damage to wells of himself and associates described as resulting from low production limitations. Ray Donathan of Henderson and T. H. Gibbs of Shreveport testified to field tests made by them, Gibbs says he was unable to adequately determine gas-oil ratios because of inability to get state authority for opening wells.

E. O. Buck, railroad commission geologist, testified oil proration means more profit all around, and George L. Nye of the Tidal Oil Co., in East Texas predicted increased production allowables would reduce many flowing wells to pumpers.

R. J. McMURRAY testified one of his wells returned to flowing production under proration. Previously it had gone dead from pressure declines when flowed open. C. V. Millikan of the Amerada Petroleum Corp., Tulsa, E. V. Foran, consulting engineer, Fort Worth, and M. Albertson, Shell Petroleum Corp., Dallas, testified for the commission along technical lines.

When the three-judge federal court began hearings involving the present Texas oil proration law the second phase had been reached in a suit brought by E. Constantin and J. D. Wrather against state orders limiting production of East Texas wells.

In the first phase, now on appeal to the U. S. Supreme Court, Constantin, Wrather and the Peoples Petroleum Producers, Inc., were granted a temporary injunction against Governor R. S. Sterling and General Jacob F. Wolters, then in charge of martial law forces in the East Texas oil field.

A three-judge court headed by United States Circuit Judge J. C. Hutcheson then held that although the governor was exceeding authority by using martial law to enforce proration the Texas legislature, acting through the state railroad commission as its conservation

agency, had the right to prevent waste of oil and gas and to regulate and control production. In the second phase now at issue the railroad commission's powers are questioned.

Other suits filed in the federal court at Tyler, Texas, have been transferred to Houston and were set for hearing at the same time as the Constantin-Wrather and Peoples Petroleum Producers case, May 30, as the purpose of all was to test the railroad commission's authority and gain permanent injunction against enforcement of Texas proration.

Throughout the litigation East Texas oil wells have been kept under martial law in the face of the decision against Governor Sterling and the Texas militia regime, except for properties belonging to interests directly involved in court injunctions.

Plaintiffs in other federal suits pending are the Atlas Pipe Line Co., Whittle-Kavanaugh Corp., T. W. Murray, Imperator Oil Co., Bill & Dave Oil Co., A. S. Palmer, Arthur F. Graf and Alfred Macmillan.

State to Ask Further Gas Waste Reduction at Kettleman Hills

LOS ANGELES, May 27

WITH the renewal of efforts by state authorities to effect further conservation of natural gas in the Kettleman Hills North Dome field, June 7, the superior court hearing the case will be asked to make ten modifications of an anti-waste injunction granted Mar. 28 under provisions of the Gas Conservation Law.

James S. Bennett, counsel for the state, has incorporated several important changes in this modified order, which it is hoped will greatly reduce the amount of gas being blown to the air—estimated at approximately 25 million cubic feet a day during April.

On the theory that the primary purpose of structure gas is to aid in the production of oil, the new order proposes that the tolerance for gas released to the air be based upon oil production. That is, not more than 200 cubic feet of dry gas should be wasted for each barrel of oil output.

Under the order now in effect the tolerance on gas wasted was set at 10 per cent of the field's total gas production. In April this total was approximately 247 million cubic feet a day, which would permit the blow off of about the 25 million cubic feet actually wasted.

Daily oil production from the north dome is now pegged at 60,000 barrels, which on the basis of 200 cubic feet per barrel would reduce the total blow-off of gas from the field to about 12 million cubic feet daily, about one half of the present amount.

Another important change, provided for in the new order, establishes a sliding schedule for the allowable gas-oil ratio of wells on the north dome. The ratio is not to exceed 5000 cubic feet per barrel of oil where the well enters the Temblor producing horizon more than 6050 feet below sea level.

However, where the well enters the Temblor less than 6050 feet below sea level and is open to production from the fifth zone (lower 400 feet of Temblor) the ratio is increased to 10,000 cubic feet per barrel of oil. It is also provided that the ratio shall not exceed 20,000 to 1 where the well enters the Temblor at less than 6050 feet below sea level, is open to production below the second zone, and is not open to the fifth zone.

The new order would restrain any production, at gas-oil ratios of greater than 20,000 to 1, from any zone in the field until all the gas produced at ratios below this range (which does not include the tolerance of waste) is utilized. Even under these conditions, production would be permitted at ratios above 20,000 to 1 only to the extent that there is a demand for additional gas, and then only from the first and second zones.

This restraint on gas production at ratios greater than 20,000 to 1 would be continued only so long as the output of gas at lower ratios is limited to the quantity necessary to produce oil at the rate of 4000 barrels to a quarter section.

It is thoroughly realized that wells on the dome of the structure will undoubtedly have higher gas-oil ratios than those on flank locations, and that the quantity of gas produced per barrel of oil from wells bottomed in the upper Temblor will be greater than from wells drilled to the heavy oil sands. The modified order endeavors to take these conditions into consideration in making an order that will provide for equitable allocation of gas production from the pool.

Representatives of the Kettleman North Dome Association are expected to submit at the coming hearing a plan for voluntary co-operative conservation of gas in the field. This course was indicated at the last hearing and it is understood that since then considerable progress has been made in formulating a workable plan.

June Allowable Reduced As Demand Falls

OKLAHOMA, City, May 28.—The production allowable for the Oklahoma City pool was cut today by order of the Oklahoma Corporation Commission from 105,000 barrels per day to 97,366 barrels. The former figure had been the allowable for the past month but in view of the new pipeline figures which showed a reduction of 7700 barrels for the month of June, the new allowable was posted.

The new figure indicates a slackening of demand for crude in the state during the past week when the average daily yield was but 398,520 barrels though a production of 442,000 barrels is permitted.

California Crude Output Falls Under New Curtailment Plan

LOS ANGELES, May 27

AT THE close of the first week of operation under the new California voluntary curtailment program, which establishes a total state allowable crude oil production of 476,700 barrels daily, many independent operators were still a long way from showing genuine acceptance of the plan that it is hoped will prevent further additions to storage.

Although it is perhaps rather early to determine the final reception of the new proration schedules by independent operators, and although the state's actual daily production at the close of the week was 478,512 barrels, within approximately 2000 barrels of the allowable, the program was not receiving 100 per cent cooperation from the smaller operators. The larger producing companies continued to bear the brunt of curtailment by absorbing the excess production of the insurgents.

Efforts by operators in the Santa Barbara coastal regions and in the San Joaquin Valley were responsible for the reduction of over 24,000 barrels in the state's production during the week. With an output approximately 10,000 barrels under its allowable. Ventura Avenue accounted for nearly half of the total reduction and made the results accomplished in other fields and by the state as whole less noteworthy. Inglewood, Richfield, and Mount Poso fields reported underages of about 1000 barrels each.

Producing areas in the Los Angeles Basin continued the stumbling block to further efforts at curtailment. Six fields in this area were exceeding their allotment by more than 16,000 barrels although underages by other pools reduced the total excess to about 12,000 barrels.

Long Beach had the largest excess of any field in the state with an overproduction of 9000 barrels daily. Dominguez, Huntington Beach, and Playa del Rey fields were reported in excess by about 2000 barrels each.

Administration of voluntary curtailment in California under the new program rests with the Executive Committee for Equitable Curtailment as supreme authority. This committee supposedly represents a cross-section of the independent faction in the industry. It was created with for the purpose of lining up those irreconcilibles who still refuse to cooperate.

The Oil Producers Central Proration Committee, consisting of 13 representatives from principal producing districts in the state, will function as a link between the executive committee and the individual field committees.

Major producing companies who have indicated their willingness to co-operate in any workable plan of curtailment are still on the side lines, giving the independent group free reign in this latest attempt to regulate supply of production to current demand.

Oklahoma Fields Again Under Martial Rule as "Alfalfa Bill" Returns

TULSA, May 28

DEFENSELESS and helpless for several days because of the removal of martial law government of its wells, the industry of Oklahoma breathed freely again Friday when Gov. William Henry Murray blew the bugle and mobilized his special detachment of two soldiers for duty in the Oklahoma City field.

While the Oklahoma's governor and authority on dietetics was absent on a speaking exhibition at Hudson, N. Y., the Acting Governor, Robert Burns by proclamation released the fields from the iron grip of the military, leaving the Corporation Commission with nobody to enforce its orders except the courts, state and federal. This plainly would not do, said the governor, so on his return he re-instated the order of Aug. 4, 1931.

This sort of thing the attorney general commented, may go on all summer. He said the governor and the lieutenant governor might save time by having carbon copies made of their orders invoking martial law and restoring same. The governor will attend the Democratic National convention in June to ride herd on his 23 delegates, 22 from Oklahoma and one, his brother, from North Dakota, which represents his strength as candidate for the presidential nomination. The attorney general thinks the acting governor will, as soon as Alfalfa Bill leaves the state, lift martial law again.

In his order putting the night and day troops back on duty, the governor recalled that the U. S. Supreme Court in deciding the Champlin case had knocked out a penal section of the Oklahoma proration law. That was the one empowering the Corporation Commission to sue for a receivership on properties where orders had been violated. Of course, this weapon has not been used, but the governor seemed to think that proration would now completely collapse unless martial law hovered over the scene to take the place of the nullified section of the law.

Just before renewing his state of war, the governor was provided with a peg on which to hang his action. The Wil-

cox Oil & Gas Co., which has been having trouble over proration for some time, went into the state Supreme Court and asked for writ of prohibition to prevent the commission's controlling the Wilcox company's Oklahoma City production. The Court ordered the commission to show cause, June 7, why such writ should not issue.

The governor's cousin, Cicero I. Murray, Lieutenant colonel of the Oklahoma national guard by executive order, and the governor's son, Massena, a guard lieutenant who also lacks federal recognition, were two of three who administered martial law. Their duties are not well defined. Some of the poorly informed have gone so far as to say that the sole reason for maintaining the fiction of martial law was to provide the two Murrays with jobs. The governor blows that theory up completely, as to Cicero, in the current number of the Blue Valley Farmer by saying:

"The statement that he (the lieutenant governor) put Cicero out of a job is erroneous; Cicero does not get one cent for acting as generalissimo of the military forces. These are merely extra duties. He gets the same salary whether there is a military order or not. He is chairman and attorney of the States Advisory Committee, and his salary is paid from the Petroleum Institute.—"

Some portion of this is incorrect. Cicero is no longer chairman of the committee. He bears the title of executive director—he was chairman last year. As for the salary mentioned, it is not the understanding of some other members of the committee that he is paid for his executive directing.

Alco Gets Argentine Order

NEW YORK, May 25. — An order for two complete refinery units for the La Plata refinery of Argentine Government Oil Fields at Buenos Aires has been received by Alco Products, Inc., 220 E. 42nd St., New York.

The units are to be used for making lubricating oils. One will have a capacity of 2300 barrels and the other 2200 barrels daily.

Motor Car Registrations Down 7.96% In Nine Mid-Western States

CLEVELAND, June 1

MOTOR car registrations in a group of nine middle western states were 7.96 per cent below those of the same period a year ago on a recent check conducted by the Western Petroleum Refiners Association.

The nine states with about 20 per cent of the country's motor vehicles showed a drop in registrations of 449,332 units, from 5,643,642 in 1931 to 5,194,310 in 1932.

On May 1 Minnesota registrations totaled 655,710 as compared with 677,709 last year, a drop of 3.3 per cent. Iowa with 574,185 showed a drop of 8 per cent from May 1, 1931, when the total was 624,400. South Dakota with 130,677 was off 25.4 per cent from its registration of 175,212 vehicles in 1931.

Michigan registrations on May 1 totaled 934,614 as compared with 1,046,770 in 1931, a drop of 10.7 per cent. Illinois reported a loss of 9.3 per cent in passenger cars, from 1,215,000 to 1,102,582 and of 12.5 per cent in motor trucks from 164,421 to 143,936.

In Wisconsin there was an increase of 10 per cent in registrations up to May 5, from 480,071 in 1931 to 528,200 this year. This was due to the fact that May 1 was the dead-line on tags last year while March 1 was the last day to get tags this year.

Up to April 1 in Indiana there was a loss in registrations of 7.5 per cent, from 583,052 to 539,211 units. In Kansas up to May 1 the loss in passenger car registrations was 10.2 per cent from 426,312 to 382,686 and in trucks the loss was 9.3 per cent from 63,962 to 58,041.

Oklahoma figures are available only up to March 1 and are not indicative of final conditions this year since the last day for obtaining tags had not passed. The loss in passenger car registrations in Oklahoma to March 1 was 22 per cent and in trucks was 27.9 per cent.

For the entire group of nine states the total registrations on the latest day available was 5,194,310 as compared with 5,643,642 on the corresponding dates last year.

Toledo Oil Moves

TOLEDO, O.—The Toledo Oil Co. and The Paragon Refining Co., of which Rome E. Goodwin is head, moved their headquarters May 15 to 2229 Jefferson St., next to Park Lane here.

State Awards River Bed Lease in East Texas

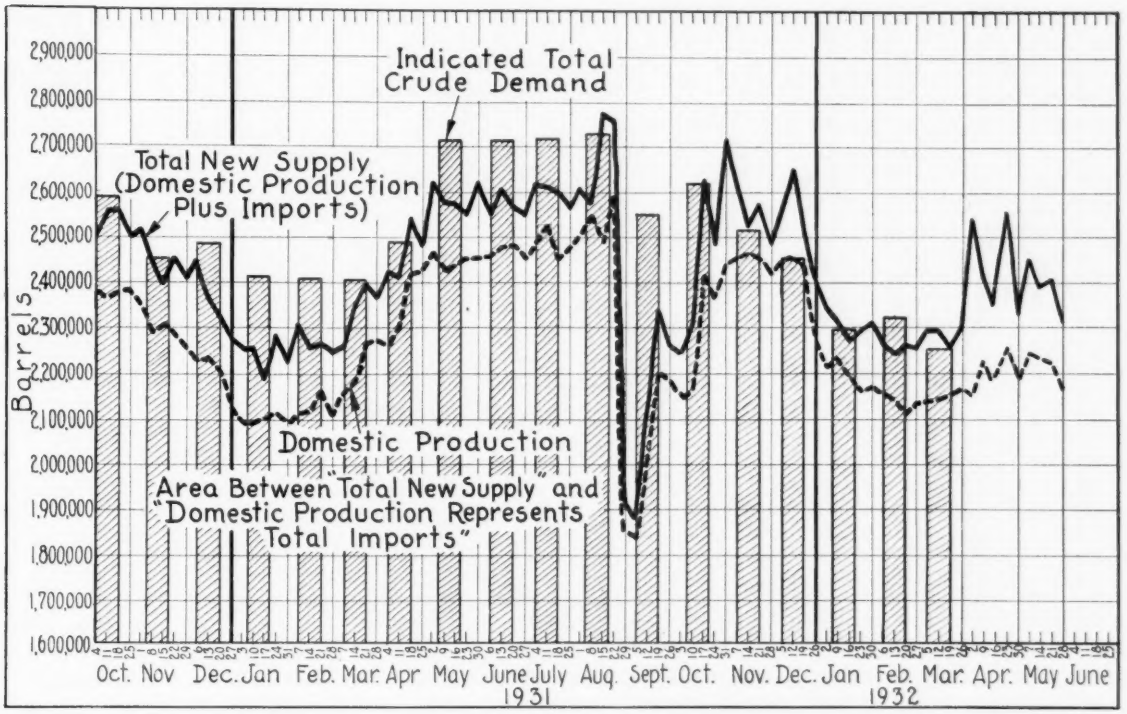
HOUSTON, May 27.—Subject to final action of the Supreme Court of Texas in the suit of F. B. Jackson against the state land commissioner, the Texas Board of Mineral Development has made tentative award of lease to oil rights of the Sabine river bed in the East Texas district to the Rhodes Drilling Co., Fort Worth. It is estimated the company's bid ultimately will yield $3,258,000 to the state.

Rhodes Drilling Co. bid on the 780-acre tract as a unit, offering three-eighths royalty, plus a bonus of $5,125 a well, payable out of one-sixteenth of eight-tenths of the oil produced and saved. The company would be required to drill approximately 114 wells in developing the riverbed area.

The supreme court recently denied F. B. Jackson a lease to prospect for oil and gas after a filing he had made under an old law, but he has asked the court for rehearing.

Texas Board of Mineral Development is composed of Governor Sterling, Chairman C. V. Terrell of Railroad Commission of Texas and State Land Commissioner J. H. Walker.

Review of Late Production News



This chart shows crude supply according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns)

DOMESTIC crude production dropped 55,950 barrels daily average in the week ended May 28 the American Petroleum Institute estimates. Imports fell 43,400 barrels daily average to 136,857 barrels per day bringing total new supply down more than 99,000 barrels daily average.

The new proration work in California brought output in that state down 13,800 barrels while month-end production in Oklahoma also was down 31,650 barrels daily average. Texas reported a drop of 6650 barrels in daily average output.

Texas

A REDUCTION of 2000 barrels in daily average production from East Texas failed to offset declining distribution last week and for the first time in nearly two months crude oil was run to storage.

Estimated production was 335,000 barrels while distribution declined to 326,000 barrels, compared to 353,000 barrels the preceding week.

East Texas refiners were using only slightly more than 16,000 barrels daily, which represents a reduction even compared to the winter months when gasoline prices were much more unsatisfactory than at the present.

In excess of 5850 producing wells had been completed in East Texas at the close of last week, but reports on activity for 10 days ended May 26 placed new operations at 205 and completions at 190, compared to 145 and 135, respectively, the preceding week.

The three mile northern extension to the Government Wells pool in Duval county, which flowed through drill stem from a foot of sand at 2328-29 feet failed to fulfill operators' expectations while in process of being completed late last week, but a commercial well was indicated. The well, Suttle et al No. 1 Bennett, in the center of Sec. 44, appeared capable of at least 100 barrels daily, but some thought it might do better when cleaning out is completed.

Montgomery county's third well—the first with major oil producing prospects—was the feature of the Gulf Coast district. It was Strake Oil Corporation No. 2 South Texas Development Co. in the Theodore Slade survey 2200 feet south of the discovery gas well drilled by the same operators and completed last December. No. 2 Strake was tested through drill stem May 22 and in 15 minutes filled the hole and was reported to have flowed to the fourble boards for five minutes. The tester was set at 4978 feet and total depth was 5030 feet.

A new purchaser for the East Texas district appeared likely last week with acquisition of Houston Oil Co.'s 6-inch line terminating at a loading rack near Kilgore by Wales Pipe Line Co., which had already connected a few properties and was understood to be negotiating for others.

Daily Average Production Important Districts, American Petroleum Institute Figures

(By Telegraph)

	Week Ended May 28 Barrels	Week Ended May 21 Barrels
Okla. City	81,400	99,550
Total Okla.	399,150	430,800
East Texas	334,300	338,100
Total Texas	871,900	878,550
California	489,700	503,500
East of Rockies	1,679,700	1,721,850
Total U. S.	2,169,400	2,225,350

California

IN THE Ventura Avenue field, Associated Oil Co. had its deep test—Lloyd 83—at the critical depth of 9460 feet. Officials are still undecided as to where the test will be bottomed, although as long as mechanical difficulties are not encountered it probably will not be completed short of 10,000 feet.

Standard Oil Co. of California was reported drilling ahead in gray sand of the Temblor formation in its No. 6 well on Sec. 29, 23-19 of the Kettleman Hills Middle Dome. This project, which conclusively demonstrated the productivity of the smaller Kettleman structure with an output of about 1200 barrels of 57 gravity oil from a zone penetration of about 300 feet, is being deepened to determined the lower-zone possibilities. Its present depth is below 8200 feet.

Petroleum Securities Co. is still engaged in a difficult fishing job on its Burbank No. 1, original discovery well of the Kettleman middle dome. After five months of efforts to recover drill pipe and tubing that became frozen in the hole during an attempt to effect a water shut off, reports indicate all but 2000 feet of the tubing has been recovered.

Oklahoma

THE discovery of Peters Petroleum Co. and Producers & Refiners Corp., in the Osage which came in about a week ago now is believed good for 2000 barrels per day from the Siliceous lime. The well made more than 600 barrels in 24 hours when pinched back after a first hour flow of 167 barrels. The discovery has caused quite a flurry and the spudding of several new wells and surveying of other locations. The well is in the SE NW NE 24-24-7E due east of the naval reserve.

Amerada Petroleum Corp. has found the Hunton productive in a late completion in the Sacred Heart area of Seminole. The well offsets the pool discovery which is producing from the Simpson. At 70 feet in the Hunton the well swabbed and flowed 220 barrels. Drilling is being continued to the Simpson.

Gypsy Oil Co. has an unexpected oil well in the SE NW of 1-15-16 in the old gas field of Muskogee county. Sand found at 3653 to 3657 is yielding 10 barrels per hour.

Kansas

THE Stoltenberg area of Ellsworth county registered the most interesting completions in the state. Extending the area to the northeast, the Gypsy Oil Co., No. 1 Kozisek, Se, 16-16-10W, topped the Siliceous lime at 3354 and at a total depth of 3369 had 1800 feet of oil in the hole. The well has logged high and it is thought that with a shot it will make a good producer.

Beardmore et al did not have as good fortune in their test in the SE NE SE, 22-16-10W, which found only sulfur water in the Siliceous lime at 3395 and is to be plugged and abandoned. This well is on the east side of the block and indicates that production is not likely to extend far in that direction.

Gas fields of the state were extended or improved also. This was particularly true of the Schaffer area in Rush county where the Flynn et al No. 1 Bude, NE 16-18-4W, was completed for a total of 25,000,000 cubic feet from a pay found from 3468 to 3493. The well is a half mile extension.

In the Burton gas area of Harvey and Reno counties a half mile south extension was registered by the 1B, Goering of Olsen Oil Co., NE NE, 35-23-4W. Gas in this well is coming from the chat and a gauge showed 60,000,000 cubic feet and a rock pressure of 1150 pounds. Two other wells are being made ready for spudding in this area.

East Texas Well Output Reduced to 54 Bbls.

By Telegraph

FORT WORTH, May 28. — The allowable output per well in the East Texas oil field has been reduced again, to 54 barrels for the first half of June, by the Texas Railroad Commission. Allowable output in May was 61 barrels daily per well in the first half, and 59 barrels in the second half.

Thompson is New Texas Commission Member

HOUSTON, May 26.—Mayor Ernest O. Thompson of Amarillo, a lawyer by profession, becomes a member of the Railroad Commission of Texas, June 4, succeeding former governor Pat M. Neff, resigned to become president of Baylor University at Waco. Mr. Thompson will serve on the commission until Jan. 1, 1933, under appointment of Governor Sterling, but will be a candidate for the office to succeed himself. The railroad commission, in addition to governing public utilities in Texas, administers the state's natural resource conservation laws.

Mr. Neff, retiring commissioner, has been at political odds with his associates, Commissioners C. V. Terrell and Lon A. Smith, for months; and also, as minority member of the commission, has been among its severest critics on oil and gas conservation affairs.

New Books

Natural Gas Geology

A new book on the geology of natural gas has been announced by the American Association of Petroleum Geologists, Tulsa, Okla. Though it is as yet only in the formative stage, with a tentative publication date of late in the present year or early in 1933, the scheduled contents are of general interest to the natural gas industry.

The book is to be a symposium on the world occurrence and geology of natural gas and will detail all of the known major fields. Since the greater portion of the world supply is in the United States, this country will be divided into nine provinces for better discussion. In addition to the papers dealing with specific areas and the large number of illustrations, there will also be included technical articles covering natural gases other than hydrocarbons, appraisal methods, rock pressures etc., as well as general papers on the gas industry.

Oil Can Lead Other Industries Out of Depression--Beaty

THE oil industry has a tremendous responsibility to modern civilization, Amos L. Beaty, president of the American Petroleum Institute, told members of the industry at the mid-year meeting of the institute at Tulsa.

"Ours is the one major industry that gives some promise of recovery," he said. "The question of the hour is whether we can and will hold our gains and go forward, or whether we are to beat a retreat."

"More than just business is involved in the present world crisis," Mr. Beaty told the institute. "It has become a question of citizenship and patriotism. The country has lost its courage. Red propaganda is being spread and people can be found who doubt the stability of the government itself."

Pointing out that an advance by any major industry would in turn start others, Mr. Beaty reiterated his assertion that the oil industry has the greatest responsibility of all because it is in the best position. The favorable position of the industry is due to the fact that it has kept a large part of its trade despite the fact that the motor car manufacturer is having a lean season.

"Ours is the one industry that can steady itself, prevent further decline in employment, and make moderate earnings for investors," he said. "When we have done these things we will have accomplished that even greater purpose, the restoration of public confidence and business."

A comprehensive program was suggested by President Beaty to bring an upturn in the industry and in general business. The program includes:

1. Keep on the safe side in the manufacture of gasoline by producing even less than the reduced consumption estimated by government and institute committees.

2. Stop the current trend toward increased drilling activity and wildcatting.

3. Aggressively support the bill now before congress permitting oil states to join an interstate compact to conserve oil resources.

4. Tighten up on proration at once particularly in California and East Texas.

5. Increase employment by spreading available work among more wage earners through curtailing hours of work or days of work per person.

Particular importance was placed by Mr. Beaty on the necessity for limiting refinery output to the lessened consumption.

"When our domestic consumption did not decline last year, and when world consumption declined only a little, we had a real and in one sense an actual decline of 10 or 15 per cent, because that would have been the rate of increase but for the depression," Mr. Beaty said.

"We lost our bearings—and incidentally our shirts—because we had built and planned for the normal increase. Now there is unmistakable evidence of a current and more serious decline.

"THE statistical committees will make their forecasts. In the past they have been very close to results. My own opinion is that we shall be very fortunate if our domestic consumption and exports of gasoline for the last nine months of 1932 are within hailing distance of the estimates. From what I have heard and seen I would, without any claim of statistical skill, estimate a decline of 15 per cent.

"However that may be we should put our house in order. And it is better to err on the safe side. The truth is that we could, if we only would, make moderate profits on still lower consumption. All we have to do is keep production in balance with demand and allow for gradual liquidation of inventories. No drastic reduction is feasible or necessary, but we must make adequate allowance for the decline in consumption. Better allow for too much than too little. And the fact will remain, no matter how much production is reduced, that stocks are in excess of economic working stocks, such as the committees would recommend.

"Time and time again it has been demonstrated that we cannot have prosperity in the oil business when too much crude is produced. With refineries overbuilt and a surplus of marketing facilities it is impossible to avoid demoralization if an excessive supply of raw material is on the market. The ingenuity of man for chiseling is such as to render the case hopeless. There can be temporary remedies, appeals to reason, some sportsmanship, but finally they all break down and chaos reigns if the supply of raw material does not check itself or is not checked at the source.

"FOR several years now we have had a surplus of crude oil and have seen the result. In recent months our position has improved because of restraints upon production. Gradually the underground surplus is being reduced, and gradually, but more slowly, the surplus above ground is declining, and this process will eventually bring us back to a balance."

Mr. Beaty views with alarm the present trend of field operations. On April 1 of this year there were 2776 rigs up and wells drilling and on May 1 this number had increased to 3083, an increase of 308, he reported. East Texas accounted for 182 of the increase, north central Texas 20, Gulf Coast 23, and Oklahoma 56, a total in these areas of 281 out of the 307. He suggested the probability that May will show an added increase.

"Production at this time is too high," Mr. Beaty said. "It must be reduced or our hopes will be blasted. Producers should not dally. For the United States, 2,000,000 barrels daily at this time, should be the limit. Why does East Texas insist upon exceeding 325,000 barrels when the railroad com-

mission has found production above that quantity results in waste of reservoir energy? Why does the commission fail to enforce its orders? Why do producers allow the matter to get out of hand? Is it proper to temporize with a thing so vital? Self interest is poorly served when relapse of the industry is invited. A few paltry dollars is nothing in contrast with a national calamity.

"California must do something, and do it promptly, or else shoulder the responsibility for what may happen. The present is no time for mild words or soft sayings. If production in Cailfornia is not soon brought under control we may expect at least to lose what we have recently gained through months of effort, and California will be the greatest loser.

"The difficulties in California are fully realized. The sacrifices made there by some are fully appreciated. But there remains the stubborn fact that production is too high. It is a baffling problem, but not too severe for those who are mindful of its importance and their own responsibility. The slogan should be, Attack!

"Even with California down to 450,000 barrels and East Texas down to 325,000 there will be more production than present conditions warrant. Companies that are supposed to be sympathetic with efforts to stabilize the industry, are lunging straight ahead in various pools producing all the oil they can, or all they are allowed to produce, seven days a week. They are to be found ranged along boundary lines, with other companies professing the same faith occupying offset positions, each straining every nerve to take out the last drop of oil at prices below the average cost of production."

Calling attention to the buck passing between producer and refiner as to who is to blame for conditions, Mr. Beaty pointed out that if the refiner curtails his runs it is inevitable that crude production must be cut.

"The unvarnished truth is that crude production controls," he said.

On the credit side of the ledger Mr. Beaty pointed with pride to the finer spirit of co-operation in the industry. He was heartened by the decision of the U. S. Supreme Court in the Champlin case, upholding the principle that states may prevent economic waste of natural resources.

Although inferior use of petroleum in replacing coal actually is an economic waste, Mr. Beaty does not favor legislation against such usages. He believes such laws would be incapable of enforcement. On the other hand the proper remedy is the compact between states to keep production low enough so that these inferior uses would not be made of oil. It was recommended that the industry get actively behind the interstate compact bill.

The employment problem stands next to balancing the national budget in importance, Mr. Beaty said, perhaps of even greater importance. "If the ten million workers of the country now unemployed were profitably at work the budget would soon balance itself," he said.

"I think it would be constructive if our industry should take the initiative in a broad movement to more equitably distribute employment. Such distribution could be accomplished by reducing each present employe's work time and pay and taking on enough new employes to equal the reduction.

"I see no reason, legal or otherwise, why the companies represented in this institute cannot agree on a program of this kind. It is clearly a proper subject of combination and agreement.

"The plan might seem drastic to employes affected, most of whom have already suffered substantial reductions, but they could well afford to make this further contribution, with the understanding that, when conditions warrant it, the old rates will be restored."

Mr. Beaty suggested that every oil man make it his personal business to help combat the gasoline tax evasion racket. Everyone should consider himself a committee of one to see it ended, he said.

Gas Tax Law Sustained

WASHINGTON, May 31. — The U. S. Supreme Court today upheld the 6-cent gasoline tax law in South Carolina which had been attacked by the Gregg Dying Co. Opinion of the court was written by Chief Justice Hughes. Previously the South Carolina Supreme Court had declared the act constitutional.

Motor Transport Group Discusses Oil

TULSA, May 28.—Motor oils and spark plugs were topics of discussion at the monthly meeting of the Petroleum Motor Transport Association here May 27.

C. E. Jackson, motor transport division, Mid-Continent Petroleum Corp. Tulsa, read a paper on "Why The Oil In The Crankcase of An Automobile Should Be Changed Every 500 Miles." C. W. Shaffer, Defiance, Ohio, discussed spark plugs.

Mr. Jackson said the three main reasons why oil in the crankcase should be changed are contamination with dirt, dilution with fuel, and contamination with water. "In the burning of gasoline," Mr. Jackson said, "over a gallon of water is formed for every gallon of gasoline burned. Most of this water goes out the exhaust in the form of vapor but some of it finds its way past the pistons into the crankcase.

"Since we cannot eliminate road dust, contamination with fuel and with water, it is obvious the oil must be changed at regular intervals. Past experience has taught us that 500 miles between changes insures safe operation of the average car. For that reason and because air cleaners and oil filters are not perfect we recommend changing oil every 500 miles.

"Some companies recommend much higher mileage between changes, but we feel the cost of additional fresh, clean oil is much less than the cost of repairs to engines and in lubricating anything—motor or chassis—the more lubrication you put in it and the more you 'free things up', the better."

Narrower Margins Essential

In Placing Marketing On Sound Basis

By W. T. Holliday*

Presented before American Petroleum Institute, Tulsa, June 1-3

THE natural economic trend in the marketing branch of the oil industry is towards narrower margins and, as a result, a diminishing number of retail outlets, Mr. Holliday, one of the foremost students of the economics of marketing, points out in the accompanying article.

Those actively engaged in the marketing of oil products have their choice, that of adopting a course which goes along with this natural trend, he goes on to say; or of continuing to work against it, through allowing wider margins, which brings new outlets into the business and, in turn, reduces the volume of business at existing outlets, completing the vicious circle by making still wider margins necessary.

This is not an abstract, academic matter in which only the executives of the larger oil companies are interested. It is vital to the success of all engaged in the handling of gasoline and motor oil, no matter on how small a scale.

A few loose bricks, in the form of companies intent only on gallonage, may lead to the pulling down of the whole marketing structure. It is to be hoped that all concerned will read Mr. Holliday's address and give heed to the points it raises.—Editor.

THE purpose of research, says Mr. Kettering of General Motors, is to answer three questions. Where have we come from? Where are we? And where are we going?

In looking for the probable future developments in our industry and seeking to lay our plans in accordance with the probable economic trends, it is not unlikely, to say the least, that an analysis of present facts and the past developments which brought them about should indicate how the unpleasant facts of the present are to be eliminated.

It is my personal impression that if we are to come out of the present unsatisfactory situation we must reverse the process by which we arrived here. In fact, economic forces, I believe, will reverse the process, and our effort, both as an industry and as individual enterprises, should be to attempt to go with the economic tide rather than to attempt to invent quick panaceas.

Throughout the world there seems to be a strange general urge today to attempt to thwart economic law by trying to invent clever cures for symptoms rather than to diagnose and correct fundamental causes. The result of such efforts to lift ourselves by our bootstraps has been on the whole to prolong the agony and make things worse.

Perhaps the most astounding effort of this kind has been the recent attempt of the House of Representatives to inflate the dollar by legislative decree.

It is difficult to disagree with Dr. Joseph E. Pogue when he said in his address before the American Institute of Mining and Metallurgical Engineers last February: "Indeed, at the risk of oversimplification, it may be said that the world depression had its roots in three causes —credit inflation, trade barriers, and price fixing devices— in respect to all three of which human effort attempted to run counter to basic economic principles."

Inter-Relation of Marketing, Refining, and Production

Time and again it has been said in the last few months that producers and refiners have got their house in order, why does not the marketing part of the oil industry put its house in order. On numerous occasions we all have heard it said that when the producers curtail crude oil production to current demand and gasoline inventories are brought down to a reasonable figure, the sales departments insist on breaking the entire price structure by selling gasoline below cost.

On several occasions leaders in our industry have said that if the larger units in this industry would *refuse* to sell gasoline at such low figures, the situation would be righted and prices would advance. The question is asked in despair: Why is it that when we get our industry's statistics in good shape at great sacrifice by producers and refiners, prices do not rise?

All of these statements and questions ignore fundamental economic causes and are in tune with the modern idea that economic forces can be circumvented; that the effects of economic causes can be changed without changing the causes themselves.

The marketing end of the

*President Standard Oil Co., Ohio, Cleveland; vice-president for Marketing, American Petroleum Institute.

business can *not* separate itself from the production and refining parts as though it were a separate industry. All three departments constitute one single industry, and economic effects usually are manifested first in the marketing end. Gasoline prices have been the *barometer* of fundamental economic conditions, and reflect conditions not only in the marketing department but in the refining and producing ends.

IT DOES not lie within the *power* of the marketing branch of the industry to control prices of finished products. In the absence of monopoly or governmental control or assistance, prices are made by *markets* and not by individuals, and markets reflect all of the subtle economic forces that are at work. With the aid of state authorities it is possible to set up artificial trade barriers and prices as to crude oil, but the free and open *gasoline* market will reflect the fundamental conditions.

Gasoline prices have been reflecting the fundamental overproduction: Overproduction of potential supply of crude oil, overproduction of potential refinery capacity, and overproduction of marketing facilities which resulted from overproduction of crude oil and refining capacity.

The production and refining ends of the business have *not* put their house in order, and cannot do so as long as the present law of oil and gas remains unchanged. The fundamental supply factor is not aboveground storage alone, but the total inventory of all products including the crude oil which lies below the ground and can be brought to the surface by the turning of a valve.

Crude oil statistics concern themselves only with aboveground storage and daily production, and there still remains the unknown and probably overestimated factor of potential production. Refinery statistics concern themselves only with present inventories and present daily runs, and do not include the quantity of gasoline which in a few days could be dumped upon the market if our refineries, whose potential daily production is greatly in excess of daily demand, started to run at capacity. There hangs over us constantly the possibility of the breaking of the dam of proration and the immediate conversion of that crude oil into gasoline far in excess of current demands.

On account of the liquid nature of crude oil and the character of modern continuous refinery process, the potential supply of crude oil below the earth is part of the gasoline supply, and so long as the fear exists as to the possibility of the dam breaking which holds back that supply, the sensitive tank car gasoline market will continue to be low. Even the supply of crude oil above ground is sufficient to keep prices depressed.

We lay so much stress upon the statistics of gasoline inventory, and seem to ignore the fact that crude oil inventory stored above ground, to the extent of its gasoline yield, is practically the equivalent of a gasoline inventory since it can be so quickly converted into gasoline. Even if we ignore *potential* supply, the inventory of crude oil above ground is approximately six times the total gasoline inventory, so that our real gasoline supply above ground is approximately four times as large as our gasoline inventory statistics would indicate.

IN A time of scarcity or anticipated scarcity of potential production, or in a time when potential production is reasonably in balance with current demand, the crude oil inventories above ground would constitute a reasonable reserve which would not necessarily enter into the supply factor; but at a time like the present, even if we ignore the potential supply below ground, the actual crude inventories in storage are in essence a part of our gasoline inventory and indicate a supply factor so large as to necessitate low prices in a free and open market. I do not mean to disparage the worthy effort to reduce gasoline inventory but merely am trying to emphasize that it is only one part of the supply factor.

This, in my judgment, is why, no matter what is done in the producing states in the way of maintenance of crude oil prices, the gasoline market continues to be low. Any company which attempts to take the high ground of ignoring markets and basing its gasoline prices upon posted crude oil prices may do so if it pleases, but in doing so it will surrender the market to others; and a market once lost is not easily regained.

GASOLINE prices have been the barometer of fundamental economic conditions because they are in a market which is open and free; and when crude oil prices have not synchronized with gasoline prices it has been because the crude oil market is by nature more sluggish and subject to control, and has not reflected fundamental conditions.

In the last analysis the battle ground of this industry is in the marketing end, because the only purpose of producing a raw material is to supply the finished products which the marketing department can sell; and, therefore, the fundamental economic conditions of production must have their logical effect out on the marketing firing line.

Where Have We Come From?

Where did we come from in this marketing end of our industry? Any impartial analysis, I am confident, will disclose that it was the pressure of crude oil which brought us where we are. In 1911 this industry was beginning a rapid growth from a kerosine industry into a gasoline industry. The rapid growth of the automobile industry for many years brought an increase in demand for gasoline even more rapid than the growth in production of automobiles because people drove their cars further and further each year.

The demand for gasoline put a tremendous strain upon the oil industry to furnish a sufficient supply and to distribute it at the points required. The public was willing to pay a good price to have the job done, and with margins of profits were the inducement offered to our industry to do the job.

New capital attracted by the wide profits rushed into the industry; and the crude oil was found, the refineries built, and

the distribution facilities installed.

When, however, the job was largely done and new capital no longer was needed, another incentive to refining and marketing expansion came along, in addition to that of the rapid tempo of the economic boom, to wit: the finding of tremendous oil pools with consequent overproduction of crude oil, and the urge upon the owners thereof to find outlets for it. Refineries were built and expanded, not for the purpose of supplying the owners' marketing requirements, but for the purpose of disposing of crude oil.

LOGICALLY, only such products should be produced as can be sold, but in the oil industry the raw material became the boss, and the sales departments of the industry were told to sell what was produced. When the refineries converted the crude oil into gasoline, it had to be marketed and various methods were adopted to force the gasoline to market which brought about the present overproduction of distribution facilities which we today so much deplore. The outstanding methods which were used to attract new outlets for gasoline were wider and wider margins and the furnishing of capital, such as leased equipment, to dealers.

Widening of Margins to Jobbers and Dealers

The quick and easy way for refineries to get new outlets without capital expenditure was to enlist jobbers, new and old, by the bait of cut prices or wider margins; the jobbers in turn added to the further expansion of outlets by attracting into the business more and more retail dealers.

Refiners competed with each other on lower and lower tank car prices and wider and wider marginal contracts to jobbers; and the refinery marketers and jobbers competed with each other for retail dealers by lower and lower tank wagon prices with consequent wider and wider margins between service station and tank wagon price. The wider these margins became the more newcomers were attracted into the distributing end of our industry.

Thus the competition was not merely on prices but on price structure. We have seemed to overlook the fact that the ultimate competition of the industry is on service station prices, and we have attempted contemporaneously to compete on tank car, tank wagon, and service station prices. The result, so long as demand was rapidly increasing, was primarily an increase in the number of outlets, but the margins created a vicious circle.

As the number of distribution facilities increased and consequently distribution cost increased as a result of diminished gallonage per outlet, there was an ever-increasing necessity for wider and wider margins, and as the margins widened price-cutting on the part of the recipients of the margins increased, so that the widening of margins had a continually destructive effect upon ultimate retail price.

Gasoline price-cutting is an attempt at industrial suicide. By and large, over the years price-cutting has not operated to increase consumption materially. The essential effect of gasoline price-cutting is to take business away from one competitor and give it to another. Consequently, it is natural and inevitable in our industry that competitors must meet each others prices. Therefore, since open price cuts would be promptly met by competitors, the device grew up of giving *secret* discounts or rebates on both service station and tank wagon sales.

THIS threw the distributing end of the business into the control of rumor and gossip. Purchasers played one company off against another by claiming that they had been quoted a lower price by a competitor. Salesmen rushed back to the home office with this news and were given authority to meet the price. In many, many cases the rumor proved to be false, and the marketer who thought he was meeting competition was in fact an aggressive price-cutter.

It was primarily to lift the industry out of this situation and to place competition out in the open that the industry adopted its Code of Marketing Practice. The primary benefit of the code is to enable us to compete on *real* prices instead of falsely rumored prices. (Unposted commercial discounts, therefore, are contradictory to the essential purpose of the code.)

Where Are We?

Where are we today? We have gross over-expansion of distribution facilities. We have too high a distribution cost because of the low gallonage per pump resulting from this over-expansion. We have the need for wide margins to sustain our expensive distribution setup, but no hope of maintaining such margins in the face of competition tendered by low-cost marketers who are entering the field. And yet our present margins still are sufficiently wide to attract into the business not only such new type of marketer, but the conventional type as well.

EXPANSION is still going on, while margins inevitably are tending to decline. This, in the face of declining consumption, means only further decline in gallonage per outlet and increased distribution per gallon. And all this at a time when prices are the lowest in the history of the gasoline industry.

Narrowing of Margins

For the past few years margins have been narrowing. Crude oil prices and service station prices have been coming constantly closer together. The gross margin of profit for the industry as a whole is declining as distribution costs tend to increase as a result of multiplication of outlets.

The first narrowing of margins grew out of the recognition of the necessity of basing service station prices upon wholesale gasoline prices, rather than upon posted crude oil prices or refinery cost of gasoline. For a number of years refining companies marketing at retail set their retail prices on a basis of their cost, and during the period of rapid expansion were able to increase their gallonage although they lost in their percentage of the total business.

Gasoline produced from low-priced crude oil, however, and distress gasoline resulting from overproduction, forced itself upon the market in such quantity at price-cuts below these

companies' cost, based on posted crude oil prices, until in the last few years it has come to be recognized and practiced that retail prices must be based, not upon current cost, but upon the wholesale tank car or cargo markets. This spread between the wholesale price and the service station price, like all other margins, has been steadily narrowing.

This narrowing of the total marketing margin has been brought about through the coercion of price-cutting. As gallonage per outlet tended to decline there was an urge upon the part of dealers and jobbers protected by margins to increase their gallonage through price-cutting. The soundness of a margin between tank car and service station price can be readily determined by the trend of price-cutting.

Influence on Margins of New Type of Marketers

The most insistent and persistent urge toward narrower margins, however, has come from that new type of marketer commonly referred to as the tank car service station operator or trackage station. This type of marketer buys in tank car lots, usually on the open market, and sells through one or more service stations, usually located upon a railroad siding.

In the beginning he usually selected a medium sized town for the site of his activities, but more recently he has been invading the large cities. His whole merchandising policy is based upon selling at two or three cents below the general service station price. He is able to do this not because of any advantage due to his sidetrack location, because it is just as cheap or cheaper for the conventional type of marketer to truck to service stations from a nearby bulk plant. Neither is his advantage as to the matter of overhead or direct expense so great as has been suggested by some.

Those advantages are not sufficient to account for his price reduction. His real advantage is that he does not carry the burden of giving a wide margin to dealers. His low sales cost is due to the large volume which he sells through a given station as a result of his cut in price. He is simply an opportunist taking advantage of a situation, because if everyone sold at his price no one would get any increased gallonage or lower cost.

It strikes me that this type of marketer is the spearhead of economic force coercing a narrowing of margins. The overexpansion of distribution facilities created such excessive marketing cost per gallon that a gross margin of profit was necessitated which attracted this type of marketer into the business. He foreshadows the inevitability of the narrowing of the margin between the tank car and service station price which will be nature's way of eliminating the excess of distribution outlets.

Such type of marketer sooner or later must be met by price reductions and consequent narrowing of total margin. If he is not met he multiplies his success, and others like him enter the business. Sooner or later enough price-cutting stations will have appeared to force a general price reduction to meet the competition tendered.

I emphasize this part of the discussion because I believe that whatever course of action we may pursue depends largely upon our convictions as to the importance and significance of this new kind of marketing. I realize that there are some people who counsel that such price-cutting competition should be ignored upon the theory that the so-called legitimate oil companies can retain sufficient business at higher prices upon the basis of quality and prestige.

I BELIEVE, however, that any careful analysis of the operations of this new type of marketer and of the effects of his marketing in numerous localities where he has been permitted for some considerable time to operate without being met, will show conclusively that his operations will succeed against the present conventional methods of marketing, and that he by no means presents anything like a mere temporary problem.

It is only a short time after he becomes established until he is able to develop merchandising and quality of products and secure public favor and prestige comparable to that of the old-fashioned type of marketer. So long as he sticks to the philosophy under which he started and does not imitate the conventional type of marketer in taking on dealers at wide margins, he is invulnerable against the ordinary type of marketer and will c o n t i n u e to grow in strength and in prevalence so long as his prices are not met. He has no crude oil to dispose of and no refineries to keep running; he operates his business from the logical point of view, to wit, from the point of view of distribution.

Effect of Third Grade of Gasoline

About a year ago this type of competition was recognized with the so-called third grade of gasoline. The results have not been very effective. He is countering with price-cuts on lubricating oil and lubrication, and with improved quality of gasoline. He seems to have no difficulty in procuring non-ethyl gasoline of anti-knock quality from numerous refineries, and seems to be disparaging, with success, the quality of the so-called third grade of gasoline.

I happen to know one of these cut-price marketers who operates in an area where the third grade gasoline has been sold for about a year. He showed me his figures recently, and since the inception of the third grade his gasoline sales through the same outlet have increased about 25 per cent. In my own personal opinion the only ultimate advantage which will result from the third grade will be the narrowing of the dealer's margin in proper proportion to the narrowing of the total margin.

That, it seems to me, was the real significance of the introduction of the third grade of gasoline, to wit: the narrowing of the dealer's margin thereon. Dealer's margins, except on the third grade, have only narrowed slightly in the last four years; they have not narrowed in proper proportion to the narrowing of the total spread between tank car and service station price; and their narrowing has been entirely insufficient to enable the distributing end of our business adequately to cope with the new type of competi-

tion tendered by the trackage station.

The trackage station in effect has been passing on to the public the dealer's margin, and the industry generally cannot meet his prices and maintain the present dealer margins without bringing the price realized from dealer business down practically to the level of the tank car price.

Where Are We Going?

Where are we going? It seems inevitable that we must retrace our steps. We arrived here through wide margins, and we must go back to narrower and narrower margins. The narrowing of margins is nature's way of forcing us to become more efficient by getting our distribution cost within this narrow margin. This can only be effected by increasing our gallonage *per unit;* and that can only happen through diminution of the present number of distribution outlets.

If the economic trend is toward narrowing of margins, then it would seem clear that any marketing practices tending to prolong the existence of present wide margins is an effort to swim against the economic tide and to prolong the agony of evolution. Efforts in the face of changing conditions to retain wide marginal tank car contracts, and efforts to gain dealer business by offering wider margins than are prevalent, are examples of what I have reference to. There seems, however, to be a continual effort of marketers toward freezing the situation by the making of contracts which are not promptly adaptable to changing conditions.

Tank Car Marketing

Back of the problems of tank wagon and service station marketing lies the practices of refineries in tank car marketing. As pointed out heretofore, the urge upon refiners to get gallonage brought about wide marginal tank car contracts. The margins guaranteed in these contracts have narrowed some, but the narrowing has tended to lag behind the actual spread between the tank car spot market and the service station price.

Marginal contracts usually are made for a period of a year and are signed up at different times during the year, so that there never is a time when there are not outstanding marginal contracts guaranteeing a margin beyond what the sound margin should be. This makes it extremely difficult to readjust the division of the total margin between dealer, jobber, and refiner, and also to establish any retail price structure that can be maintained.

If we inevitably are tending toward narrower margins then it stands to reason that tank car contracts made by refiners, guaranteeing a fixed price or a fixed margin for a definite period, throw barriers in the way and create confusion in the process of adjustment. If refiners would go with the economic tide they should abolish marginal contracts as soon as possible.

In what other industry does the manufacturer underwrite the jobber so that the latter has no interest in the ultimate retail price?

It seems probable, however, that marginal contracts will continue for awhile, and if marginal contracts are written they should be written with an eye to the future and not to the past, and above all should be flexible and adaptable to changing conditions. One of the greatest obstacles to reduction of dealers' margins is the marginal contract to jobbers.

Let us suppose, for example, that in a given marketing area the prevailing margin between spot tank car price and service station price has averaged in the past year 5½ cents per gallon and that indications are that it will narrow in the following year to 5 cents. If refiners, merely out of habit or for the sake of easy sales, write contracts on the old 5½-cent marginal basis for the ensuing year, it makes it practically impossible to bring about in the ensuing year any sound readjustment between service station price, dealer price, and refinery net-back.

The flat marginal contract makes extremely difficult the narrowing of dealers' margins, because if the result of the narrowing of the dealer's margin is to leave to the jobber protected by a wide marginal contract the additional revenue resulting from the reduction in the dealer's margin, he inevitably tends to cut prices on the tank wagon market for the purpose of gaining new dealers.

In Ohio this year we have found that the greatest difficulty in narrowing of the dealer's margin has been the jobbers protected by marginal contracts who therefore refuse to follow the decline in the dealer's margin. Also, of course, to the extent that a jobber, protected by a wide marginal contract, markets direct through its own outlets, he has a type of ammunition for cutting retail prices that cannot be met by any reduction in the general retail price, since that simply reduces his cost accordingly.

ONE of the most demoralizing influences today is the jobber selling a refiner's advertised brand which he purchases under a marginal contract, especially if the margin be based upon the local service station price rather than on the prevailing service station price over a broad area. When a jobber having a well known brand cuts his price openly or secretly it has the same effect as if it were done by the major company from whom he purchases.

Under a marginal contract giving local protection the jobber has every inducement to break down the service station price. If his open and secret price-cuts and those of other similar jobbers compel a reduction of the service station price, he has suffered nothing and can continue his tactics because his margin remains the same.

Let us consider now the competition among jobbers and refinery marketers for tank wagon and service station business. The margin between the spot tank car price and the service station price in a given marketing territory tends, let us say, to be about 5½ cents. At least so far as open service station prices are concerned, most marketers will be compelled to sell at the same service station price. What should be the division of this margin between the tank wagon seller and the dealer; in other words, what should be the dealer's margin?

If the dealer had a 3-cent margin at a previous time when

the total margin was 6 cents, it would seem reasonable that his margin should be reduced when that total margin declines to 5½ cents. Dealers' margins, however, have not been narrowing in proper proportion to the decline in the total margin, and the opposition to the decline comes not so much from the dealers as from the tank wagon sellers who are competing for the dealer business.

Intelligent dealers realize that there is no durable advantage to them in a wide margin which attracts so many additional outlets to compete with them for gallonage that their total revenue is not improved. There is, however, the continual tendency on the part of jobbers and refinery marketers, in competing for tank wagon business as in competing for tank car business, to attack the basic structure or relativity of prices and to obstruct the narrowing of margins by competing on the tank car and tank wagon prices.

As pointed out heretofore, as an industry we compete not only upon ultimate retail price but upon price structure, and this continually tends to prevent the readjustment of marketing margins.

The inevitable result is to drive all prices lower and lower. If A, for example, seeking to go with the economic trend, insists upon reducing his margin to dealers to 2½ cents below the service station price, but his competitor B insists upon selling at a 3-cent margin, one of the two competitors will always be below the other as to either the tank wagon or the service station price until one of them surrenders or the zero mark is reached. The refusal to recognize a common price structure results in chaos because competitors can never match each others' prices unless they are competing upon the same price structure.

Economic Principle of Price in the Gasoline Business

We ought to recognize as a marketing industry that since the rapid expansion and demand for gasoline has passed, no company can increase its gallonage except by the loss of gallonage of others, and that any attempt to procure that increased gallonage by price-cutting on any price in the structure simply tends to pull down the entire price structure.

There must be from time to time, changing with conditions, a structure or relativity of prices which is sound. If the margin between tank car and service station price declines from 6 to 4 cents it is manifest that the dealer's margin should decline in proper proportion, and if any company fails to follow a movement toward such a decline in the dealer's margin, it is knocking down all prices in the structure.

THE largest marketer in a given competitive area should recognize its responsibilities of leadership and should endeavor to adopt price structures and sales policies which are sound and which *can* be followed by its competitors.

The competitors, on the other hand, should recognize the economic principle involved, and if a price structure in a given competitive area is economically sound it should be followed. This is for the reason that if it is not followed a chaotic condition results which breaks down prices all along the line.

Competitors must meet each other's prices, and if they are to be met all must follow the same price *structure*. When anyone adopts a different structure or cuts prices he is simply attempting himself to be the leader, and if his efforts have any effect he *will* be followed in the area in which he operates.

Much ignorant criticism has been leveled at our industry at times because of the fact that marketing competitors match each others prices. This, however, is natural and inevitable, and is something neither subject to just criticism nor something to be apologized for. Since price cutting does not materially increase demand, and simply takes gallonage away from someone else, prices must match each other.

We would have a much improved condition in the marketing branch of the industry if any company, having a real stake in this industry and yearning for increased gallonage, would recognize that he who seeks to gain that gallonage by price-cutting or departure from the prevailing price structure, thereby assumes the function of a leader who will be followed, and that it therefore behooves him to be sure that his leadership is sound.

Summary

In conclusion, it would appear that the economic panorama in the marketing end of our industry unfolds itself somewhat as follows:

1. The combination of an over-expansion of distribution facilities with attendant high selling costs, both supported by wide margins, inevitably attracts new low-cost marketers unencumbered by dealers' margins who force reduction of prices and of margins.

2. The inevitable result of the over-expansion of the entire industry is the narrowing of margins, which is nature's way of forcing us to become more efficient.

3. The problem of the marketing end of the industry, therefore, becomes that of adjusting itself in as orderly a way as possible to the inevitable narrowing of margins, with consequent reduction of number of distribution facilities. Whether this adjustment is to be an orderly one or a chaotic rout depends largely upon whether enough marketers recognize the trend and attempt to adjust themselves to it promptly as conditions develop.

4. In order that the industry may have flexibility in adjusting itself promptly to the economic trend of narrowing margins, it must abandon guaranteed or fixed margins, whether they be to jobbers, to dealers, or to consumers, and keep itself contractually free to readjust prices and price structure at any time.

5. Chaos cannot be avoided if refiners, having developed accepted brands, turn those brands over to jobbers or dealers without accepting the responsibility for the marketing practices of such distributors as fully as though they themselves directly distributed those branded products. Order in the industry depends upon marketers assuming moral responsibility for the practices attendant upon the resale of their branded products.

6. We are returning to the narrow margin and the eco-

nomic outlet. If we return in the face of bitter competition to procure gallonage by retention of wide margins, there will be a chaotic and unnecessary knocking down of prices. The problem of the marketing end of the industry is to make the return to narrow margins and economic outlets in the form of an orderly retreat instead of a disorganized rout.

Institute Works Against Evasion Of Gas Tax In 27 States

THE fight against gasoline tax evasion has been carried on in 27 states, representing 56 per cent of the country's motor fuel consumption, by the division of marketing, American Petroleum Institute, through direct supervision or through co-operative working arrangements with local committees.

A full statement of the division's activities are contained in a report to the general committee now in session at the Institute's mid-year meeting in Tulsa, by Paul E. Hadlick, secretary of the marketing division.

Efforts of the division against tax evasion have been in force in all parts of the country, aside from the central west. This territory was organized and the work financed through the efforts of Frank V. Martinek, Standard Oil Co. of Indiana, and the Central Gasoline Tax Evasion Committee assumed entire responsibility in these 16 states.

The Pacific Gasoline Tax Evasion Committee has handled the work in California, Arizona, Nevada, Oregon and Washington. Harry D. Collier, Standard Oil Co. of California, is chairman. The committee has done its own financing. The division of marketing is co-operating, and the Pacific coast office of the Institute is working also with this committee.

The southwest territory is covered by the Southwestern Gasoline Tax Evasion Committee, E. P. Angus, Magnolia Petroleum Co., chairman. Oklahoma, New Mexico and Texas arranged their own financing. Mr. Hadlick personally organized the committees in Texas and New Mexico.

The Southern Gasoline Tax Evasion Committee is active in Louisiana, Arkansas, Kentucky, Tennessee, Mississippi, Alabama, Georgia, and Florida. J. E. Dyer, Sinclair Refining Co., is chairman. A fund was raised for the Institute to expend in these states, and activity in each state is directed by Mr. Hadlick as secretary of the committee. All states were organized by Mr. Hadlick.

Pennsylvania, Delaware, Ohio, New Jersey, Maryland, District of Columbia, West Virginia, North and South Carolina, are in Eastern Gasoline Tax Evasion Committee territory. C. G. Sheffield, Standard Oil Co. of New Jersey, is chairman. Ohio, Pennsylvania, and Delaware organized and financed their work locally. Other states joined in a financial arrangement; funds are deposited with the Institute and expended under the direction of the committee. Mr. Hadlick organized six states in this territory, and is actively in charge of the work.

New York, Connecticut, Rhode Island, Massachusetts, Maine, Vermont, and New Hampshire, are in the Northeastern Gasoline Tax Evasion Committee. Frederic Ewing, Standard Oil Co. of New York, is chairman. The Institute is custodian of a special fund raised for this district and Mr. Hadlick is secretary of the committees he organized in these seven states.

Paul E. Hadlick
Secretary, American Petroleum Institute division of marketing

Special assistants have been employed to carry on the work in the Northeastern, Eastern, and Southern districts, except for Ohio, Delaware and Pennsylvania where the work is under local direction.

The 16 central west states in the Central Gasoline Tax Evasion Committee are Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North and South Dakota, Utah, Wisconsin, and Wyoming.

Legislative work of the marketing division was concerned with proposed federal gasoline and lubricating oil taxes. Efforts against the federal gasoline tax, and a 2-cent increase in the District of Columbia tax appear to have been successful. A well planned campaign brought attention to the overtaxation of gasoline.

Opposition to a federal tax on lubricating oil appears to have been less successful. Co-operation also was given local state opposition to proposed gasoline tax increases notably in New York, New Jersey, Massachusetts, Virginia, Kentucky and Arkansas.

Machinery for the administration of the code is functioning, Mr. Hadlick reports. The 58 state and regional code committees have 933 members meeting once a month. About 50 copies of minutes are received each month. One-half of the states and one regional committee now have paid secretaries.

In the first half of the year a new code pamphlet was published, and the thousands of orders for copies indicates a lively interest in the code, the report continues.

Mailings on the gasoline tax evasion fight were 21 general letters, and 99 other pieces of literature to a list of 150 persons who are state chairmen, special attorneys and members of executive committees. Gas

Tax News has been issued seven times to report progress of the work.

Other activities of the marketing division include organization of the Legal Advisory Committee, which is holding its first meeting in Tulsa now. Two meetings of the Committee on Marketing Equipment were held. There was the routine work on the Committees on Railroad Transportation, Accident Prevention, Fire Prevention, and Disposal of Marketing Wastes. The Committee on Automotive Transportation has been taken out of the division and made a committee for all divisions.

Simple Installation Eliminates Sulfur-Dioxide Nuisance

By

J. B. Rather*

(Presented before the Mid-Year meeting, American Petroleum Institute, Tulsa, June 1-3)

ONE of our eastern refineries is situated in a thickly populated district which makes it imperative to keep all fume nuisances at a minimum. For a number of years acid sludges from treatment of light oils and naphthas were handled as follows:

During a day's operation the acid sludge was run into a cone bottom tank which already contained sufficient water to produce separated acid of the desired gravity. The acid sludge and the water were then agitated with low-pressure air for a few minutes. After a settling period, a fairly good separation of acid, tar and acid oil could be made.

During the air agitation, large amounts of sulfur dioxide were evolved, and the fact that the sulfur dioxide was practically evolved all in the space of a few minutes made its disposal a troublesome matter.

Separation of Acid, Tar and Acid Oil

It is well known that fresh light-oil sludges can be treated with water and separated with practically no evolution of sulfur dioxide, and the following scheme was devised in order to make use of this fact. A small tower 10 in. in diameter and 24 ft. high was constructed of antimony lead. Acid sludge and water are continuously delivered into the bottom of the tower along with air for agitation. The mixture of sludge and water is discharged at a point about 3 ft. below the top of the tower, from which the mixture flows by gravity into one or the other of the two alternately used separating tanks. A period of about 12 hours is allowed for settling; and a good separation of acid, tar, and acid oil is obtained.

Regulation of the water supply to the tower is obtained by occasional gravity determinations made upon samples of separated acid obtained from a small settling drum into which samples of sludge and water can be tapped directly from the tower.

The tower whose dimensions have been given will handle about 16 barrels per hour of combined acid sludge and water. In cold weather it is sometimes necessary to heat the water before mixing with the sludge.

The use of the device described has completely eliminated the fume nuisance connected with the old method of handling acid sludge; and, in addition to this, a cleaner separated acid is obtained. It is, of course, obvious that this method is adapted for use only with sludges that are quite fluid in nature.

*Standard Oil Co. of New York, Brooklyn, N. Y.

Pipeline Mileage Gains 24% in Five Years

WASHINGTON, May 26.—Pipelines for transporting oil in the United States have increased 24 per cent in mileage in five years, there being as of May 1, 1931, 111,660 miles of oil pipeline, capable of holding 23,214,000 barrels of oil, according to a survey made by G. R. Hopkins, economic analyst in the petroleum economics division, U. S. Bureau of Mines. No report has been put out in the intervening five-year period.

Of this total pipeline mileage, 58,020 miles were trunk lines and 53,640 miles were gathering lines. Five years ago there were 90,170 miles of oil pipeline, of which 44,470 miles were trunk lines and 45,700 miles gathering lines.

Eight-inch pipe made up 26,290 miles of trunk line in 1931, or 45 per cent. Most of the small-sized pipe, below six inches, and the large-sized pipe, 12 inches or over, used in trunk lines was to meet special operating conditions. The most popular size used in gathering lines in 1931 was two-inch pipe.

The total tonnage of all oil lines in 1931 was 5,460,000 short tons, of which 4,179,000 short tons, or 77 per cent, was in trunk lines and 1,281,000 short tons, or 23 per cent, was in gathering lines.

Cubic capacity of the trunk lines totaled 106,800,000 cubic feet, the equivalent of 19,023,000 barrels; the cubic capacity of the gathering lines was 23,500,000 cubic feet, or 4,191,000 barrels.

Gwilliam Succeeds Gee

TULSA—To succeed A. M. Gee, who has been appointed general counsel for the Ohio Oil Co., Findlay, O., Ross Gwilliam will come to Tulsa about June 1 as head of the legal department of the Mid-Kansas Oil & Gas Co. and the affiliated Marathon Oil Co. Mr. Gwilliam has been for the past two years counsel for the Ohio Oil Co. at Casper. He is succeeded there by Wendel Stevens, of Denver.

Wider Viscosity Limits for Free Wheel Lubricants Found Permissible

By H. R. Wolf* and H. C. Mougey*

Presented before American Petroleum Institute mid-year meeting, Tulsa, June 1-3

STRAIGHT petroleum lubricants are satisfactory for use in the roller-clutch type of free-wheeling unit, according to experimental results obtained by H. R. Wolf and H. C. Mougey of General Motors Corp. Present specifications militate against or eliminate lubricants from many crudes which should not be excluded, they say.

Experimental data obtained by these authors indicate that the maximum viscosities at 100 and 130 F., as now specified should be modified to permit the manufacture of such lubricants from Mid-Continent and naphthene crudes. Their investigation has also shown that free-wheeling lubricants containing saponifiable oils or metallic soaps cause slippage at higher temperatures than their viscosities would indicate; therefore the maximum viscosities for such lubricants at 100 and 130 F. should be modified.

The authors propose a number of modifications to the existing specifications, based on the findings during an exhaustive study of the type of lubricant needed. A condensed report of their findings and proposals, as presented before the A. P. I. Mid-Year Meeting at Tulsa, June 1-3, is given in the accompanying article.

EIGHTEEN straight petroleum lubricants and eight compounded lubricants were tested in a 6-cylinder car equipped with a roller-clutch type of free-wheeling unit in the "cold room," and the actual temperature at which slipping occurred in high gear was determined.

The particular free-wheeling unit used in these tests had been operated for 5,643 miles before these tests were made, and was considered as being typical of this type of unit after a moderate service. During the tests the car was driven an equivalent of 639 miles.

Between each test the transmission and free-wheeling unit was thoroughly drained and flushed with gasoline. During the flushing operation the car was driven in all gear positions, with and without free-wheeling, and the flushing continued until the gasoline drained clear. The excess gasoline was removed by compressed air and the unit allowed to dry over night.

After filling to the proper level with the lubricant under test, the car was driven in all gears and to a maximum speed of 70 miles per hour in high gear, both with and without free-wheeling. The car was then placed on the chassis dynamometer in the cold room and chilled to the temperature of the test. In checking for slippage at the test temperature, the car was accelerated to 8 miles per hour in first gear, to from 10 to 12 miles per hour in second gear, and from 5 to 20 miles per hour in high gear.

The clutch was disengaged in shifting gears, and in each gear position the engine was accelerated under wide-open throttle conditions. The chassis dynamometer was adjusted to absorb road torque at 20 miles per hour. After each test the temperature of the lubricant was raised to approximately 35° F. above the test temperature by driving the car at speeds from 20 to 35 miles per hour before cooling to the next test temperature.

Test Data

In order to check the consistency of the test method, the slipping temperature on oils "2," "3," and "4," obtained from the same source, was determined. Oil "17," from the same source as oils "2," "3," and "4," was included near the end of the test in order to determine whether the free-wheeling unit had changed due to wear during the testing program.

Fig 1 shows the viscosity-temperature relationship of the 18 straight petroleum lubricants plotted on the new A.S.T.M. viscosity-temperature chart, together with the slipping temperature.

Discussion of Test Data

An examination of the data shows that the viscosity of the lubricant at the slipping temperature is a function of the viscosity index. Also that the differences in viscosity at the slipping temperature are greater for the heavier lubricants. For straight petroleum lubricants, since the A.P.I gravity is roughly proportional to the viscosity index, it can be stated that the A.P.I. gravity is an inverse function of the viscosity of the lubricant at the slipping temperature.

This difference in critical or

*General Motors Corp.

slipping viscosity for lubricants refined from different types of crudes, observed in the roller-clutch type of free-wheeling unit, is due to a difference in coefficient of friction under the load and rubbing velocity conditions encountered in this service.

This same difference in lubricants refined from different types of crude is noted in the ball-bearing lubrication testing machine designed by J. O. Almen[4] and shown diagrammatically in Fig. 2. This testing unit consists essentially of two S.K.F. 906 end-thrust ball bearings mounted so that the upper race of the upper bearing and the lower race of the lower bearing can be revolved concentrically and loaded axially. The friction developed between the balls and races is measured by the rotating tendency of the free races.

Test data, on paraffin- and naphthene-base oils of the same viscosity at the temperature of the test, obtained with this testing machine, are shown in Fig. 3. Under the conditions of load and rubbing velocity prevailing in applications, where the operation is entirely in the region of fluid-film lubrication, no difference is observed between paraffin- and naphthene-base oils; but under the particular conditions of load and rubbing velocity involved in the ball-bearing lubrication testing machine a considerable difference in frictional characteristics is found between straight petroleum lubricants refined from different crudes.

The frictional characteristics of glycerine, determined by this testing machine under a maximum ball loading of 376,000 lb. per sq. in., are also shown in Fig. 3. The static coefficient of friction and the coefficient at low rubbing velocities of glycerine under high loading are higher than for the petroleum lubricants, but at higher rubbing velocities glycerine has a much

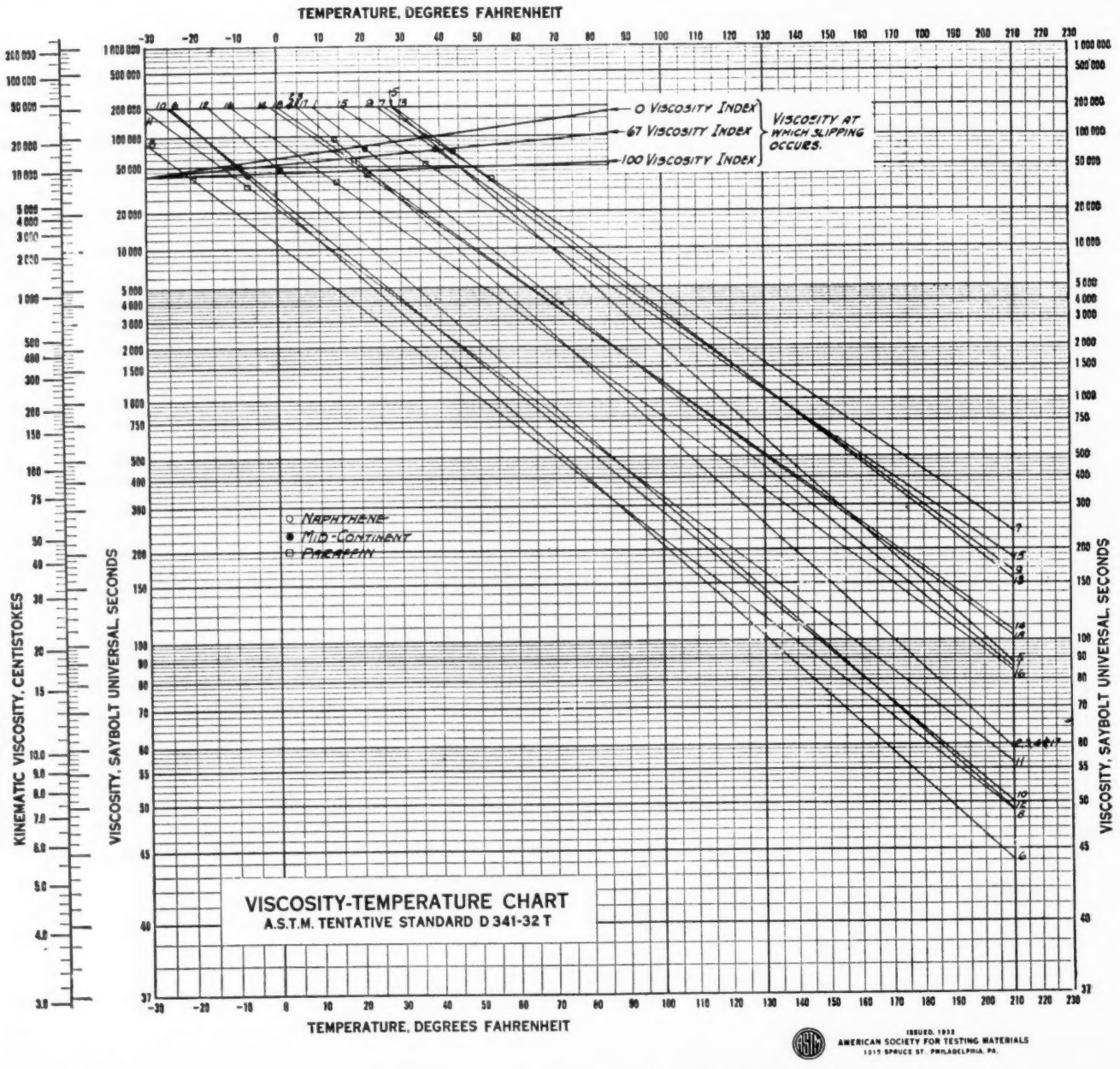


Fig. 1—Viscosity characteristics of free-wheeling lubricants studied

lower coefficient of friction than the petroleum lubricants.

The Herschel oiliness machine operates under conditions somewhat similar to the ball-bearing lubricants testing machine, except that the loads are lower and the balls are held stationary.

Herschel[5] has been unable to show any difference in coefficient of friction between oils refined from different crudes using pressures not over 30,000 lb. per sq. in., and in all probability nearer 10,000 lb. per in.

In addition, Herschel shows that the coefficient of friction, as determined on the Herschel oiliness machines, decreases as the viscosity of the lubricant increases. This is also true on the ball-bearing lubrication testing machine at low rubbing velocities; but at high rubbing velocities the coefficient of friction increases with an increase in viscosity.

The effect of the composition of the lubricant on the static coefficient of friction is discussed by Hardy and Doubleday[6]. For the same chemical series they show that the static coefficient of friction is an inverse function of the molecular weight. They further show that, for the same chemical series, the static coefficient of friction is also an inverse function of the viscosity. These data agree with the data reported by Wilson and Barnard[7] under static conditions and for rubbing speeds under 1 ft. per min. These data also agree with the results obtained on the ball-bearing lubrication testing machine at low rubbing velocities, but at higher rubbing velocities the coefficient of friction is a direct function of the viscosity for the same chemical series.

Hardy and Doubleday also show that the slope, representing the relationship between molecular weight or viscosity and static coefficient of friction, is different for different chemicals series. In some cases the lower molecular weight members of one series may have a higher coefficient than the members of equal molecular weight of another series, while the higher molecular weight members of the two series may have frictional properties in the reverse order.

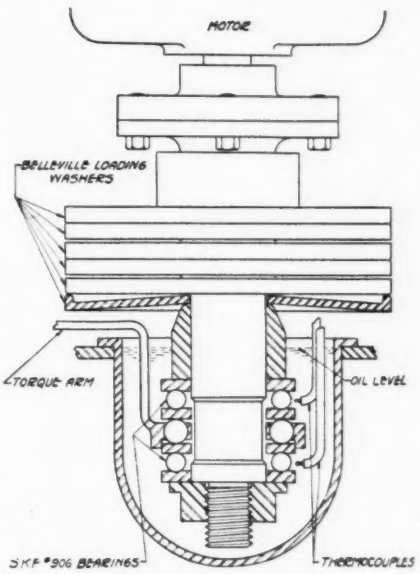


Fig. 2—Almen ball-bearing lubrication testing machine

The difference in properties of various types of lubricants which influence performance in the roller-clutch type of free-wheeling unit and the ball-bearing lubrication testing machine and in the references cited have no influence on the lubrication of internal combustion engines. Mabery[8] reports the following bearing test data on oils refined from three types of crude, tested under loads comparable to engine service.

Crude	Specific Gravity	Coefficient of Friction —Load—Lb. Per Sq. In.— 3,000	4,000	5,000	6,000
Oklahoma mixed	0.8966	0.0057	0.0059	0.0058	0.0062
Pennsylvania paraffin	0.8741	0.0064	0.0061	0.0058	0.0057
Coastal Texas asphaltic	0.9409	0.0060	0.0052	0.0054	0.0056

The difference in oiliness between the straight petroleum lubricants and the saponifiable oils is well recognized. The difference between petroleum lubricants refined from different types of crude is also due to a difference in oiliness. This difference in oiliness is of importance only in applications where the pressures are extremely high and the operation is in the field of extreme boundary-line lubrication. Wilson and Barnard,[9] in discussing laboratory tests for evaluating motor oils, point out: "With the exception of the lubrication of the bands of a planetary transmission, it has not been definitely demonstrated that oil of high 'oiliness' is of any real advantage in the operation of an automobile engine."

Proposed S. A. E. Viscosity Numbers

The selection of lubricants for the roller-clutch type of free-wheeling unit is a compromise between slipping temperature and transmission-gear noise at high operating temperatures. Fig. 3 shows the slipping temperature and the viscosity at the slipping temperature of a paraffin; a Mid-Continent and a naphthene-base oil of the same viscosity, 140 Saybolt, at 210° F. Fig. 4 shows the viscosity at 210° F. for oils of the same viscosity indices shown in Fig. 3, but for the same slipping temperature, 40° F. The curves in Fig. 3 and 4, representing the relationship between slipping temperature and the viscosity at the slipping temperature for lubricants of different viscosity indices, are drawn from the experimental data presented in Fig. 1.

This difference in viscosity at

TABLE 1
Proposed Viscosities of Free Wheeling Lubricants at 210° F.

S.A.E. 80 F.W.						
A.P.I. gravity at 60° F.	31.14	28.39	25.72	23.14	20.65	18.24
Specific gravity at 60° F.	0.870	0.885	0.900	0.915	0.930	0.945
Minimum Saybolt viscosity at 210° F.	42	42	42	41	41	41
S.A.E. 90 F.W.						
A.P.I. gravity at 60° F.	29.30	27.49	25.72	23.99	22.30	20.65
Specific gravity at 60° F.	0.880	0.890	0.900	0.910	0.920	0.930
Minimum Saybolt viscosity at 210° F.	72	71	71	70	70	69
S.A.E. 110 F.W.						
A.P.I. gravity at 60° F.	28.39	26.60	24.85	23.14	21.47	19.84
Specific gravity at 60° F.	0.885	0.895	0.905	0.915	0.925	0.935
Minimum Saybolt viscosity at 210° F.	142	140	138	137	135	134

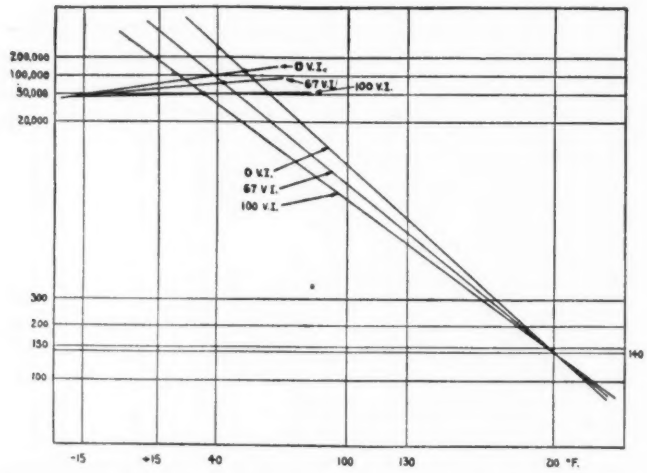


Fig. 3—Slipping temperature, and viscosity at slipping temperature of a Pennsylvania, a Mid-Continent, and a naphthene base lubricant, of the same viscosity at 210 F.

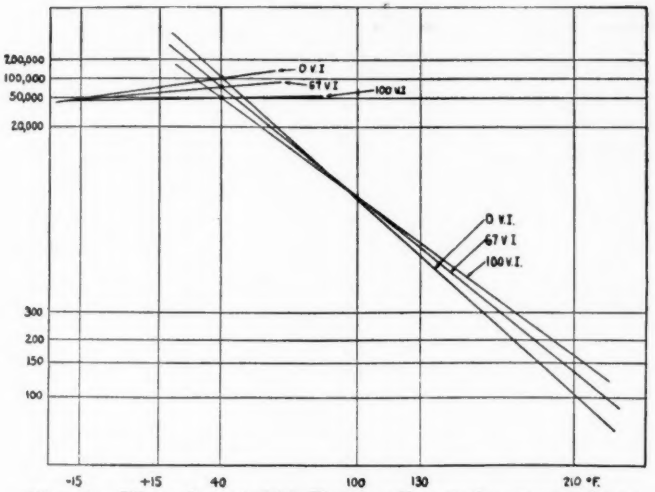


Fig. 4—Viscosity at 210 F. for oils of the same viscosity indices as shown in Fig. 3, but at the same slipping temperature of 40 F.

the slipping temperature, due to a difference in oiliness, has the apparent effect, referred to in the above discussion, of flattening the viscosity-temperature slope of the Mid-Continent and naphthene-base oils, and makes it possible to broaden the free-wheeling classification and admit oils of lower viscosity indices providing they meet the noise requirements as indicated by the viscosity at 210° F.

The proposed classification[2] further penalizes the oils of lower viscosity indices by not providing a correction factor to compensate for the influence of gravity on Saybolt viscosity.

In the modification of the free-wheeling lubricants classification, suggested in this paper, Table 1 has been added to correct the Saybolt viscosities at 210° F., thus eliminating the effect of gravity. The maximum Saybolt viscosities permitted at 100 or 130° F., for lubricants free from saponifiable oils or compounds derived therefrom, given in Table 2, have been changed to admit the lower viscosity-index oils of equivalent properties. In Table 3, added to cover the compounded lubricants, the maximum Saybolt viscosities permitted at 100 or 130° F., have been arranged so that both types of lubricants have the same slipping temperature.

The Saybolt viscosities at 210° F., Table 1, are based on absolute viscosities at 210° F. of 3.95, 11.24, and 25.20 centipoises, respectively, for the three ranges. These absolute viscosities were calculated from 100 viscosity-index oils of the minimum Saybolt viscosities at 210° F. given in the present classification.

The maximum permissible Saybolt viscosities at 100 or 130° F. were determined in the following manner: The three viscosity numbers are intended and recommended for use under minimum atmospheric temperatures of — 15, + 15, and + 40° F., respectively. Due to the fact that, except on extremely long exposure, the lubricant in the free-wheeling unit will not, under normal usage, reach a temperature lower than approximately 5° F. above atmospheric temperature, the proposed classification on free-wheeling lubricants is based on the maximum viscosities which will operate satisfactorily at lubricant temperature of — 10, + 20, and + 45° F., respectively, for the three viscosity numbers.

In Fig. 5 curves "A," "B," and "C," drawn from the data presented in Fig. 1, represent the relationship between the slipping temperature and the viscosity at the slipping temperature for lubricants of different viscosity indices. The points of intersection of "A," "B," and "C" with "D" establish the maximum viscosity at the slipping temperature, permitted under 110 F. W., for oils of 0, 67, and 100 viscosity index. Curves "E" and "F" are then drawn from the minimum and maximum viscosities specified in 110 F. W. at 210° F., 134 and 200, respectively, keeping in mind that the points of intersection of "E" and "F" with "D"

TABLE 2

Lubricants Free from Saponifiable Oils or Compounds Derived Therefrom

S.A.E. 80 F.W.		S.A.E. 90 F.W.		S.A.E. 110 F.W.	
Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 100° F.	Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 130° F.	Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 130° F.
41	167	69	320	134	1,113
42	177	70	325	135	1,116
43	188	71	330	136	1,119
44	198	72	335	137	1,122
45	209	73	340	138	1,125
46	219	74	345	139	1,128
47	230	75	350	140	1,131
48	240	76	355	150	1,159
49	250	78	365	160	1,187
50	260	80	375	170	1,215
51	270	85	400	180	1,243
52	280	90	425	190	1,272
53	290	95	450	200	1,300
54	300	100	475		
55	310	105	490		

must, in each case, represent the same viscosity indices as are represented by "E" and "F." Curves "E" and "F" establish the points "G" and "H" which fix the maximum viscosities at 130° F. for lubricants having viscosities of 134 and 200 at 210° F. The values for viscosity at 130° F. for lubricants having intermediate viscosities at 210° F. are found by interpolation.

The same procedure was followed in determining the maximum permissible viscosities at 100 and 130° F. for 80 F. W. and 90 F. W.

In the discussion on extreme-pressure free wheeling lubricants it was pointed out that the compounded lubricants, on account of increased oiliness, slip at a given temperature at a lower viscosity than indicated by the viscosity-slipping temperature relationship established for the straight petroleum lubricants. For this reason the classification on compounded lubricants is based on the maximum viscosities which will operate satisfactorily at lubricant temperatures of — 17.5, + 12.5, and + 37.5° F. or an average value of 7.5° F. lower than used in the classification for lubricants free from saponifiable oils.

In Fig. 5 it will be noted that the viscosity-temperature curves for lubricants refined from different crudes cross. It would, therefore, be possible to define the lubricants desired in terms of the maximum viscosity at the temperature at which the curves cross and the minimum viscosity at 210° F. This would involve the use of a viscosity-temperature chart and it is felt that the limits can be expressed more conveniently in tabular form.

The actual range in viscosity at 210° F., covered by the modified classifications in terms of absolute viscosity, has not been changed, except in 90 F. W., where the Saybolt viscosity at 210° F. was lowered from 74 to 72. The actual slipping temperatures remain the same as in the original classification. Consequently, these proposed changes permit the inclusion of lubricants of a wider range in viscosity index without altering the performance in service.

Proposed S.A.E. Free-Wheeling Transmission Lubricant Viscosity Numbers

S.A.E. viscosity numbers for free-wheeling transmission lubricants constitute a classification in terms of viscosity and of consistency at low temperatures only. Other factors of quality or character are not considered.

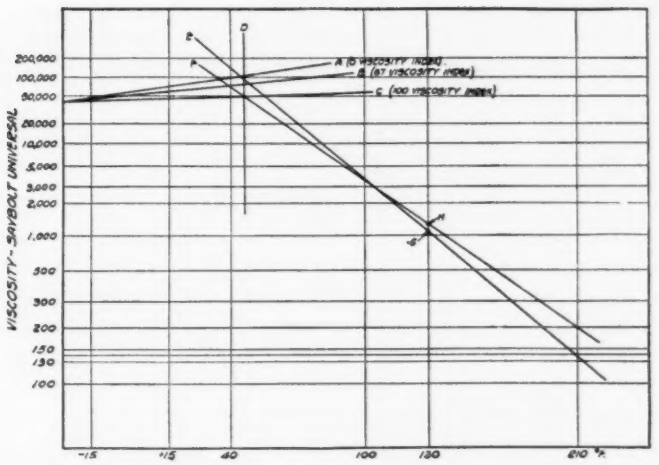


Fig. 5 — Relationship between slipping temperature and viscosity at slipping temperature for lubricants of different viscosity indices

S.A.E. free-wheeling lubricants shall be properly refined, free from water, sediment or any other substance detrimental to the proper performance of the lubricant. Fillers or abrasives such as talc, pulp, cork, fuller's earth, graphite, mica, asbestos, etc., are not permissible. Saponifiable oils or compounds derived therefrom are not excluded unless their use causes the lubricant to fail to meet other requirements. Lubricants which have an artificial viscosity are not permissible.

The Saybolt viscosity at 210° F. shall not be less than the values given in Table 1, for the corresponding gravities, and the Saybolt viscosity at 100 or 130° F. shall not be greater than the values given in Table 2, for the corresponding viscosities at 210° F., for lubricants that do not contain saponifiable oil additions or compounds derived therefrom.

In the case of lubricants containing saponifiable oils or compounds derived therefrom, Table 3 shall be used in determining the viscosity limits at 100° F. or 130° F. for the corresponding viscosities at 210° F. Lubricants whose viscosities are outside the ranges of viscosities at 210° F., as shown in Tables 2 and 3, are not permitted under these viscosity numbers. Values between the minimums and maximums, for each viscosity number, not shown shall be determined by interpolation.

Free-wheeling lubricants of the extreme-pressure type shall meet the viscosity requirements of Table 1 and of Table 2 or 3, depending upon whether or not they contain additions of saponifiable oil or compounds derived therefrom. They shall be designated by the letters "E.P."

These lubricants shall not

TABLE 3

Lubricants Containing Saponifiable Oils or Compounds Derived Therefrom

S.A.E. 80 F.W.		S.A.E. 90 F.W.		S.A.E. 110 F.W.	
Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 100° F.	Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 130° F.	Actual Saybolt Viscosity at 210° F.	Maximum Saybolt Viscosity Permitted at 130° F.
41	150	69	280	134	906
42	160	70	285	135	910
43	170	71	290	136	914
44	180	72	295	137	918
45	190	73	300	138	922
46	200	74	305	139	926
47	210	75	310	140	930
48	220	76	315	150	970
49	230	78	325	160	1,010
50	240	80	335	170	1,050
51	249	85	360	180	1,090
52	258	90	385	190	1,130
53	267	95	415	200	1,170
54	276	100	435		
55	285	105	460		

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channel in service at the following temperatures:

Viscosity Number	Maximum Channeling Temperature
S.A.E. 80 F.W.	—10°F.
S.A.E. 90 F.W.	0°F.
S.A.E. 110 F.W.	+10°F.

Notes and uses: The Saybolt viscosity is influenced by the specific gravity of the lubricant under test, and a correction factor must be applied in order to reduce the Saybolt viscosities to the same absolute values. The Saybolt viscosities given in Table 1 are based upon absolute viscosities of 3.96, 11.24, and 25.20 centipoises at 210° F., respectively, for the different viscosity numbers.

The viscosity of the lubricant at the slipping temperature is a function of viscosity and of viscosity index. The maximum Saybolt viscosities at 100 or 130° F., corresponding to the actual Saybolt viscosities at 210° F. given in Tables 2 and 3, are arranged to permit lubricants of all viscosity indices which fall within the operating temperature ranges covered by these viscosity numbers.

S.A.E. free-wheeling transmission lubricants are intended and recommended for use under the following minimum atmospheric temperature conditions:

Viscosity Number	Temperature
S.A.E. 80 F.W.	above —15°F.
S.A.E. 90 F.W.	above +15°F.
S.A.E. 100 F.W.	above +40°F.

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Outlets For Gas Products Must Be Developed, Engineers Say

THE disposal of the by-products of natural gas offers four major outlets in a field which has been only slightly developed but which must be properly exploited in the not too distant future. These outlets are; liquefied gases, synthetic motor fuels re-forming for gas fuels and as intermediates or raw materials in the chemical industries.

Presentation of the means by which natural gas and its products may be utilized, and a discussion of the results already attained in some of these was made by G. G. Oberfell and J. A. Guyer of Phillips Petroleum Co., before the mid-year meeting of the A. P. I., in Tulsa. These authors believe that in view of recent conservation measures adopted to control petroleum production and which will force the proper utilization of secondary products upon the industry, it will be imperative that the industry develop products and outlets which will effectively conserve natural gas.

That such efforts have not been made sooner is due to the abundance of raw material and the rapid expansion of the market for the main petroleum markets—gasoline and lubricants.

Development of experimental and semi-commercial plants for the synthesis of motor fuels from cracking of natural gas have progressed rapidly they say. The immense amounts of refinery vapors as well as natural gas available for this purpose, and the promise given by recent results obtained in cracking to give light oils high in benzene content indicate that this process is one of the most promising for immediate application. The authors believe that the formation of motor fuel hydrocarbons can be employed along with the cracking of gas for the enrichment of water gas or for any other purpose where gaseous fuel is needed.

Re-forming lower hydrocarbons to produce motor fuel and benzol has been studied by several groups, and the results obtained have been so promising as to warrant the construction of large-scale experimental plants for the adaption of the processes to commercial development. (See Smith, Grandone, and Rall, NATIONAL PETROLEUM NEWS, Oct. 28, 1931, page 69).

The process for re-forming hydrocarbons is relatively simple. According to the authors, "the equipment necessary for cracking hydrocarbon vapors to produce motor benzol (light oils) consists of a tube-type of furnace, a reaction chamber, and a benzol-light-oil-recovery system, with the necessary accessories such as pumps, recording instruments, etc. The hydrocarbon vapors to be cracked are heated to 1300° F. to 1400° F. in the tubes.

During this heating period endothermic reactions take place which result in the formation of the maximum concentration of unsaturated hydrocarbon gases. The hot gases from the coils enter the insulated reaction chamber where the exothermic reactions take place, during which the benzol-light oils are formed. These exothermic reactions may cause the temperature of the gases within the reaction chamber to rise 100° F. or more.

"The hot gases leaving the reaction chamber have a sensible heat content of approximately 85,000 B.t.u. per 1000 cu. ft. If the process is operated in connection with a refinery, this sensible heat can be used to preheat the charge going to the cracking stills, to top or preheat crude oil, or to crack oil by direct contact in the vapor phase.

In most operations made in conjunction with the refinery, the benzol and other light oils produced by gas cracking will be mixed with the other refinery vapors. In such cases the benzol-light oils will be recovered with the gasoline products, and no additional light-oil-recovery equipment will be necessary.

"The gas resulting from the

pyrolysis of hydrocarbon vapors and gases to produce motor fuel is in certain respects more useful to the gas industry than are the original hydrocarbon vapors. By means of a slight sacrifice in benzol-light-oil-yield, a rather wide range in quantity and quality of the gas can be obtained.

"Gases ranging from approximately 0.45 to 0.75 specific gravity and from about 875 to 1300 B.t.u. have been produced in commercial-size plant operation. Operating conditions can, therefore, be adjusted to take full advantage of the relative economics of the two concomitant products. This favorable situation, as well as the flexibility of producing a gas whose properties can be varied through wide ranges, enlarges the field of utilization of the light hydrocarbon vapors."

The authors indicated that reformation of hydrocarbons to produce gas fuel for many purposes can be accomplished by a continuous process, to greatly increase the gas volume with relatively low loss of thermal value. Cracking butane to form a gas of 1700 B.t.u. at the rate of 8000 cu. ft. per hour has been carried out in one plant for 135 days without formation of appreciable quantities of carbon in the coil. The thermal value can be varied to suit the purpose for which the gas is used by varying the cracking conditions. Temperatures of 1000 F. to 1400 F. are used, without catalyst, and nickel-chromium tubes have proved successful over long periods.

One field hitherto largely undeveloped is the use of cracked gases in the chemical industries as intermediates and raw material for various processes. Alcohols are now being produced in semi-commercial quantities, but little else has been done in this field. Production of carbon black from gas may become an industry without adequate gas supply under conservation programs, but can be produced in conjunction with other processes without additional expense. The channel process with butane has operated satisfactorily.

To Correlate Road and Laboratory Knock Testing Methods

STUDIES of the present method of rating anti-knock values of motor fuels by the C. F. R. procedure, in combination with road tests have shown that the greatest need at present is to determine a suitable, reproducible standard method for making road or car service tests, according to a report by T. A. Boyd, of General Motors Research Corp., presented before the mid-year meeting of the American Petroleum Institute. His report of the activities of the detonation subcommittee recommends the study of this problem. After a satisfactory road test is worked out, correlation between the laboratory and road methods can be effected and by this means actual anti-knock ratings may be determined with desirable exactness.

Six motor fuels have been tested by the sub-committee, in various automobiles, to determine the variation of the fuels in the same, and in different engines. Regarding the results of these tests and the plans of the sub-committee for next year, the author says;

"One of the most outstanding things is the wide variation in ratings obtained on any one fuel in a given make of car. These variations existed both when ratings were made by different laboratories using a different technique, and when they were made by the same laboratory using the same technique, but on repeating the tests on different days. The variations sometimes amounted to as much as the knock equivalent of 8 to 10 octane units.

"The fuels themselves as rated by the conventional C. F. R. procedure varied in octane number from 68 for "RT-1" to about 77 for "RT-4," a total range of 9 octane numbers. So it was that the range of ratings of any one fuel obtained in any one car sometimes varied by as much as the total range for all the fuels tested.

"On account of this relatively wide range in the ratings which they found on the road in different cars, and even in the same car from time to time, the special sub-committee on road test procedure felt that, in the light of their present knowledge it is not as yet possible for a one-cylinder engine test procedure to be settled upon which will give results that correlate with service behavior for all cars. Consequently, the sub-committee pointed out the great need for developing a uniform technique for making road tests—one that will give results which are at once reasonably representative and uniform.

"Once it has been established what a representative average road rating is, then it appears that the C. F. R. procedure can be modified to give that rating. And so, at its own suggestion the sub-committee was authorized to devote further attention to this important matter of road test procedure.

"The second phase of the work of the sub-committee consists of experiments in the laboratories of individual members, to evaluate the effects on the ratings of various types of fuels of changing different operating conditions on the present C. F. R. apparatus. The primary purpose of the road tests discussed about is to determine what ratings should be obtained. The purpose of the laboratory studies is to determine how such car ratings (when their proper values shall have been arrived at on the basis of comprehensive road tests) can be obtained with C. F. R. apparatus.

"Accordingly, the various laboratories are studying the C. F. R. apparatus and method, to determine in a systematic and comprehensive manner the effects upon the ratings secured for fuels of various types of making changes in such representative factors as the following: speed, jacket temperature,

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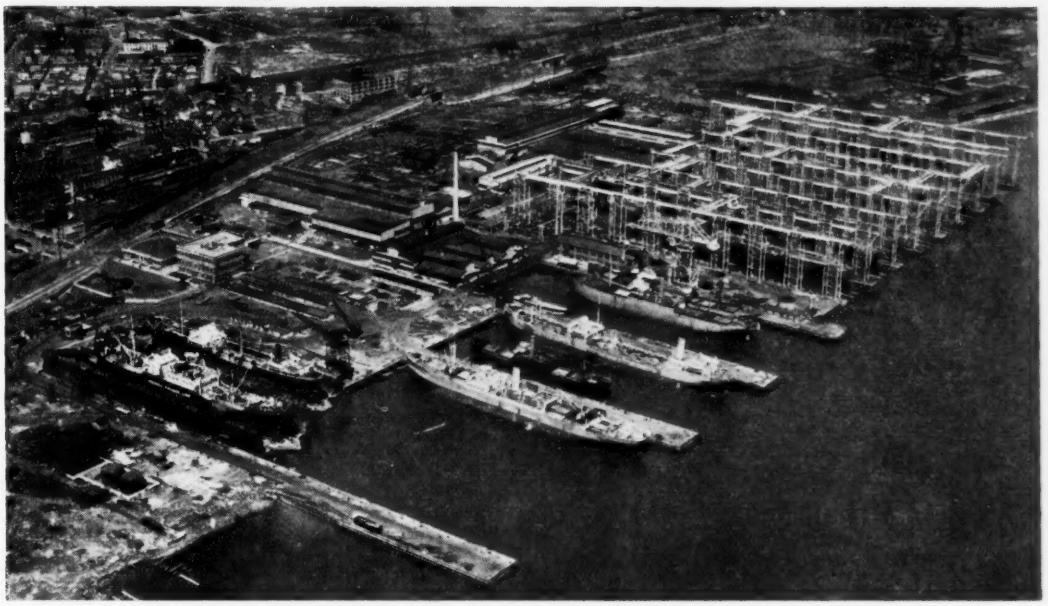

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mixture temperature, mixture ratio, spark setting, throttle opening, valve timing, turbulence, exhaust back-pressure, and degree of scavenging, as well as various minor changes in the design of the engine and intake system.

"In addition to the investigation of the effects of making changes in one of the mentioned variables at a time, the different laboratories are experimenting also with making simultaneous changes in more than one variable. And it is this latter which has been found most effective in influencing the ratings obtained on fuels which in service depart from the conventional laboratory rating. It should be said also that some members of the sub-committee are experimenting with representative automobile engines, to see whether it is possible to modify them in such a way as to reduce the amount of the discrepancy that now exists between the ratings they give and those obtained by the present C. F. R. technique."

New Device Developed for Testing Coefficient of Friction

A NEW type of testing machine for the determination of static coefficients of friction has been developed by the research department of the Standard Oil Co. of California, the results from which have proved invaluable in testing the kinetic oiliness of lubricants, according to G. L. Neely, of the California company.

Details of the construction and operation of the new machine, and the results obtained were presented before the mid-year meeting of the American Petroleum Institute at Tulsa. He spoke to the refining division June 2.

The machine consists essentially of a grooved circular track on which are rotated three flat-rimmed buttons; the rubbing surfaces contact with a lapping motion, which maintains a constant surface finish. This arrangement eliminates one of the difficulties experienced in earlier machines, wherein a large part of the work required to carry out tests was the preparation of test blocks or surfaces with uniform finish. These surfaces are mounted and rotated in a suitable rigid mounting, power is supplied from an electric motor with provision for varying the rubbing speeds over a wide range.

Oil is supplied by a sight-feed oiler to the annular space between the tracks, and the buttons spread it over the rubbing surfaces. The peculiar design of this machine, in the building of which the designers profited from the difficulties experienced by other investigators, was worked out to eliminate the variation in metal surface condition, fluid-film effects, and to attempt to maintain parallel surfaces.

Frictional torque is measured by means of a flat spring, a pointer and scale connected with the rotating track. Loads are placed on the rotator, varying from 3 to 41 pounds which places on the rotating parts a load varying from 50 to 750 pounds per square inch. With the design it is unnecessary to re-finish surfaces after each test, simple washing with petroleum either applied with a brush being all the attention needed to put them in shape for re-use.

As a result of several thousand tests this experimenter and his collaborators have determined that the factors affecting oiliness include the following:

1. Metal-surface combination.
2. Speed.
3. Temperature.

Absence of wide variation in the various tests lead the author to believe that the variation caused by different rubbing speeds, by the presence of fluid-film effects have been eliminated, and that the results approach very closely the true coefficients of static friction.

He states in part, "It will be noted that frictional resistance varies directly with the load; or, in other words, that the frictional coefficient is not affected by load (at least at moderate loads), * * * *. This was found to be true for all tests made and is, therefore, of fundamental significance in that it complies with Amonton's law of friction of solid bodies, which states that the coefficient of friction is not influenced by the intensity of loading. In contra-distinction the results of fluid-film tests made in the journal bearing machine * * * * show that the coefficient of friction varies inversely as the load," that is, the frictional resistance is not appreciably influenced by the load.

It has also been discovered that frictional coefficient is essentially independent of viscosity on this machine. Oils of widely varying viscosity and of the same type were tested and the uniformity of results showed that, under test conditions, viscosity has little effect, if any.

At low rubbing speeds the author found the frictional coefficient is "profoundly, though not uniformly, effected by rubbing speed." "The test results* * * * indicate that the boundary film is of a distinctly different nature at high and low speeds. Therefore, in testing lubricants for oiliness properties, the effect of speed cannot be overlooked."

The author also described the construction and use of two other machines, one a journal machine for testing fluid-film lubrication, the other a specially designed worm-gear for determining the efficiency of the gear with different types of lubricants. He particularly points out that different conditions are required for measuring the two types of lubrication, and different machines required.

Chile Creates Oil Monopoly

WASHINGTON—A state monopoly for the importation and distribution of petroleum products has been created in Chile through a law signed May 17. The law permits participation of 25 per cent foreign capital and 10 per cent foreign labor and provides for the expropriation of existing private installations.

Two companies are doing about 90 per cent of the business in Chile, representing a combined capital of $15,000,000.

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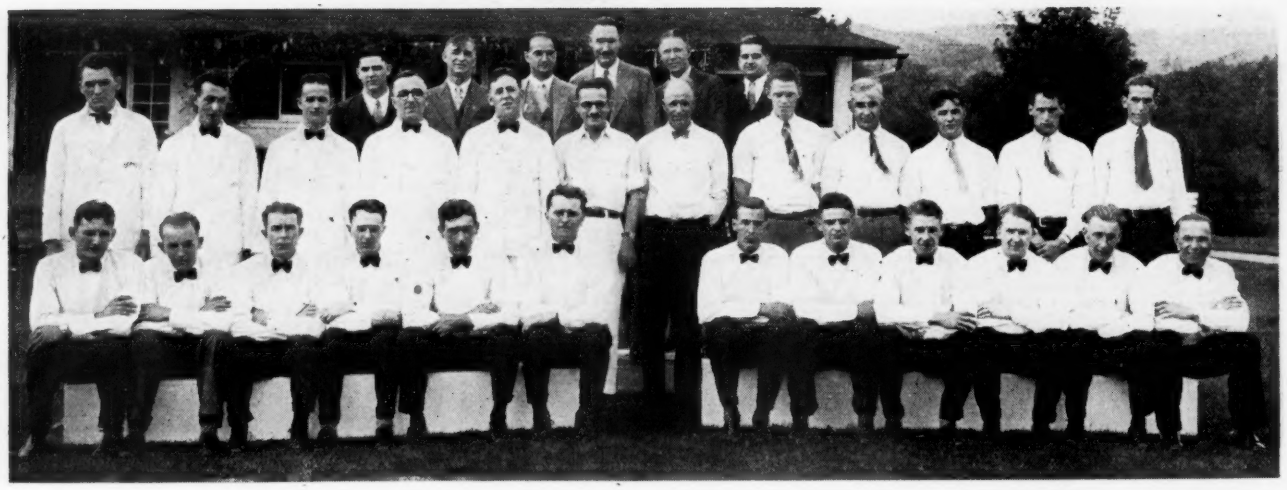


First aid teams in the contest at the Fire Marshals meeting May 27 at Oil City, Pa. In the first row are the two teams of the Kendall Refining Co., that tied for second place. In the second row, at the left, is the winning team from the Standard Oil Co. of Ohio. To the right, second row, the team of the Quaker State Refining Co., Independent Refining Co. plant. Judges are in the third row

Fire Marshals Stress Economy In Prevention Work

OIL CITY, May 27

ECONOMY derived from fire and accident prevention work was stressed in addresses at the annual convention of the Fire and Safety Marshals of the National Petroleum Association in Oil City, Pa., May 27, 28.

In the first aid contest the Standard Oil Co. of Ohio team won for the second consecutive year. Two teams of the Kendall Refining Co. tied for second place.

J. H. Herbert, Standard of Ohio, was re-elected president. A. J. Fruth, Freedom Oil Works, was re-elected vice-president; S. M. Wolbert, Kendall Refining Co., secretary; and T. F. Cavanaugh, Pennzoil Co., treasurer.

Members of a committee, appointed by President Herbert to consider practical safety and fire prevention problems are F. J. Kiernan and H. W. Walchli, Tiona Refining Co.; T. F. Cavanaugh and D. J. Harvey, Pennzoil Co.; Howard Green, Kendall Refining Co.; and T. J. Craig, Freedom Oil Works.

Fire marshals visited plant No. 1 of the Pennzoil Co., and saw a demonstration of a carbon dioxide type extinguisher on May 28.

Achievements during the year in efforts to reduce refinery hazards were reviewed by President Herbert. Willis Crane, from the N. P. A. Washington office, spoke on plans for the year and outlined a program of regular inspections.

S. M. Wolbert, Kendall Refining Co., discussed "Modern Refinery Fire Fighting Equipment and Its Application." There was a discussion of the application of various types of equipment especially on the application of foam to storage tanks and to the size of pipes and chambers.

D. J. Harvey, Pennzoil Co., read a paper by L. D. Fulton, of the same company, on the economy of reducing refinery fire hazards. Mr. Herbert explained recent tests of fire extinguishers made by his company on tank wagon fires.

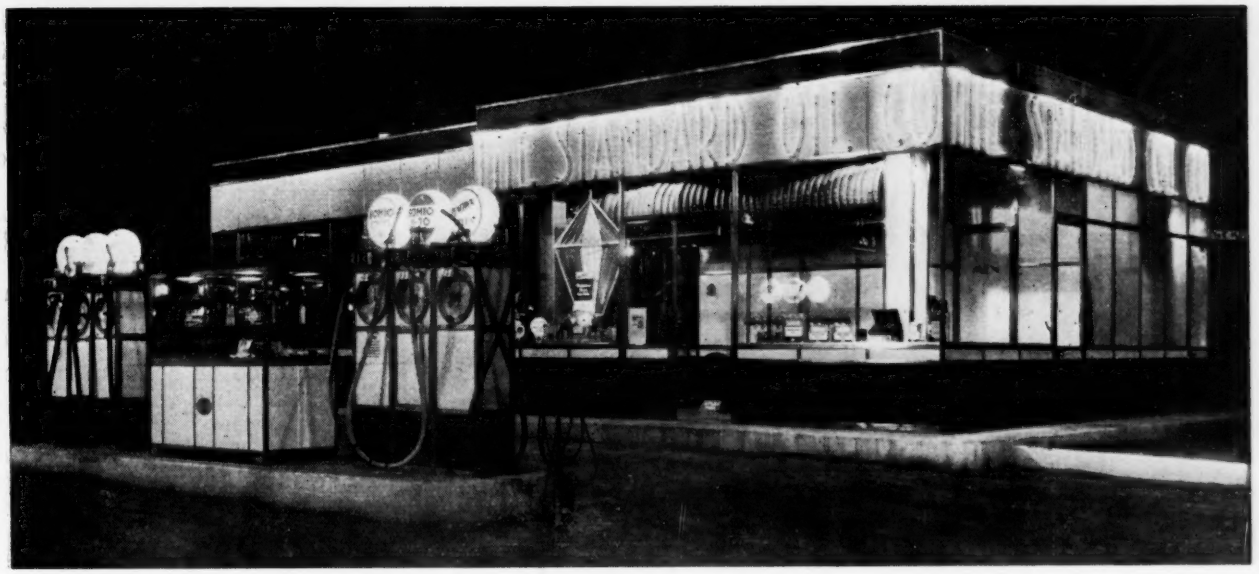
Work of a fire brigade in a recent refinery fire was described by Charles H. Lindberg, Conewango Refining Co. Conewango's plant at Warren, Pa. is on a narrow, long strip of property, between a highway and a creek.

While charging a still recently some water was picked up. Oil was thrown from the still into a sewer that empties into a ditch in front of the tank yard. There were two explosions. Two catch tanks, one condensate tank and the loading rack caught fire. Flames back of the still shot 50 feet into the air, and were rolling over some benzine tanks in the yard. The tower foreman turned in the plant alarm. Within two minutes two generators were throwing foam on the condensate tank. Flames were fought back to the source of the fire, and it was out in 18 minutes.

"I don't believe there was an excited man on the job," he said. "Talking from past experiences in our plant, if we had generators in every department and did not have trained fire brigades we certainly would have burned down part of our plant. It is my opinion that trained men are the best part of your fire equipment."

By winning the first aid contest Standard of Ohio teams have two legs on the plaque offered by the N. P. A. Conewango won it the first year. Kendall Refining Co. teams have been close seconds for the past three years.

Participants in the contest were teams representing Quaker State, Kendall, and the Ohio Standard. Judges were representatives of the Bureau of Mines and the Mines Safety Appliance Co.



General view of the new Standard of Ohio station built of modern materials

MODERNISTIC MATERIALS and DESIGN FOR SERVICE STATIONS

By E. B. Wagoner*

ONLY in comparatively recent years have the major oil companies realized that, in their retail marketing activities, a very important and remunerative service was not being offered to the motoring public. No facilities were then available for draining oil from the crank case of motors.

Facilities for this service were provided by the installation of the wooden drain rack or pits, and later by installing rotating lifts. These units were located conveniently in the service station yard unprotected from the weather. Stations where oil draining equipment was installed, at a later date, were supplied with portable hand operated units to permit the filling of transmission, universal joints, etc., with lubricant.

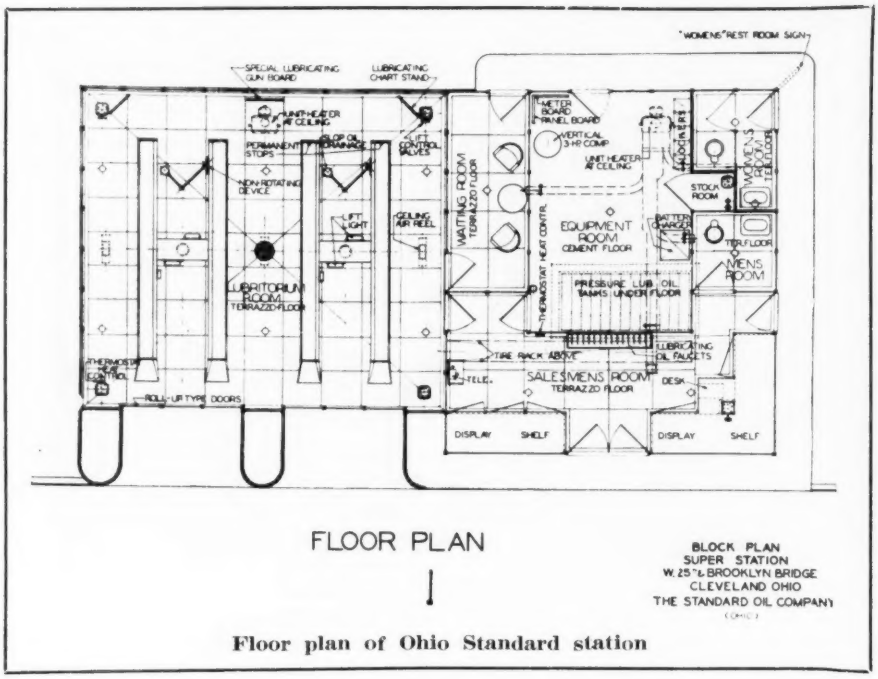
Due to the customer acceptance of this service, a few of the better class of service stations were improved by placing pits —or lifts—under cover in buildings constructed of metal, or modest brick structures. These buildings as a general practice, were without doors, heating, waiting room, or rest room facilities. Little thought was given to obtain a building of pleasing design. However, this was a distinctive improvement over the original method, permitting the service to be performed regardless of weather conditions and also removing from general view an unsightly operation.

The equipment manufacturers, about this time, introduced on the market reasonably satisfactory high pressure lubricating guns of various types, and the enclosed "grease" stations were generally equipped with some type of high pressure greasing units.

This lubrication service was offered by the various marketers generally without serious study or thought and without training their operators. It is only natural that this service did not receive universal acceptance, as the quality and thoroughness of the lubrication service offered was not satisfactory. The repair garage and service department of motor car dealers still enjoyed the large volume of lubrication service work.

The more progressive oil mar-

*Manager construction department, Standard Oil Co. of Ohio.



Floor plan of Ohio Standard station

keters quickly realized that they were not offering the motorist the complete, uniform and thorough service that they required, and serious investigation was made of lubrication requirements, quality of lubricants to satisfactorily lubricate all parts, and the most desirable type of lubrication equipment to perform a satisfactory job.

In a comparatively short time super station building programs were started by practically all major marketers. Every conceivable type of facility was built, as to plan and arrangement of servicing facilities, and as to architectural types and materials used in their construction.

As competition was keen to obtain the favorable consideration of the motorist, it frequently followed that the different marketers' enthusiasm outweighed their economical considerations in planning the stations, resulting in over-equipped, poorly planned and designed stations for their requirements, and in many instances an entirely too expensive a facility resulted for the merchandising operation.

Largely due to the competitive system, the products and facilities of modern marketing are developed to satisfy the constantly changing needs and tastes of the buying public. To justify the existence of a super-station, it must be built and operated at a cost that will result in favorable net profits, after allowance for maintenance costs, amortization of investment, etc.

It is in reality a convenient shelter for whatever merchandising operations are considered expedient and profitable. It should furnish such attraction value through its appearance and convenience that it will impress itself upon the public automatically as affording a convenient, inviting facility to obtain prompt and complete lubrication service and other motoring requirements, by the use of high quality advertised products serviced by courteous, trained operators using the most modern equipment in pleasant surroundings.

With this idea in view, the Standard Oil Co. (Ohio) has attempted to develop a distinctive and individualized type of super station. Careful consideration was given to stations already built of every type throughout the country, particularly as to layout, equipment and facilities included in the scheme.

Methods of servicing, equipment most efficient and economical were analyzed. The most desirable layouts for working space to take care of present operations were studied, and as much consideration given to possible future requirements as was deemed practicable to avoid early obsolescence. The following requirements were considered of utmost importance in developing a satisfactory type after the floor plan was decided upon.

1—To be of a standardized type of construction and of such materials as to eliminate maintenance costs as much as possible.

2—To be so designed as to permit its erection in the least possible time regardless of weather conditions.

3—The color scheme of red, white and blue to be featured in the design and materials used in applying those colors that would be permanent and not require refinishing periodically.

4—The design to be of an entirely new, distinctive type that would have no similarity to the present general conception of a super station, thereby becoming actually an institutional standard.

5—Its design should permit the maximum of display—both as to the services offered and the merchandise offered for sale.

6—The building should be one that could be attractively illuminated at night with a minimum number of illuminating fixtures and with an economical electrical current consumption.

7—The over all cost must be moderate to permit its construction at numerous locations if it were to serve as a **"standardized"** super station.

Numerous design studies were developed and one decided upon that had enough merit to justify the erection of an experimental station. Other stations were built with certain revisions in design to eliminate objectionable features that became apparent.

The station recently completed at W. 25th and Brooklyn Bridge, Cleveland, is constructed in accordance with the interpretation of the practical application of available building materials to a design that meets the previously stated requirements as nearly as possible. The accompanying block plan of the building indicates the arrangement of floor space, service rooms and arrangement of equipment. The plot plan indicates the station layout in general.

A brief description of the construction features of this

building may prove of interest.

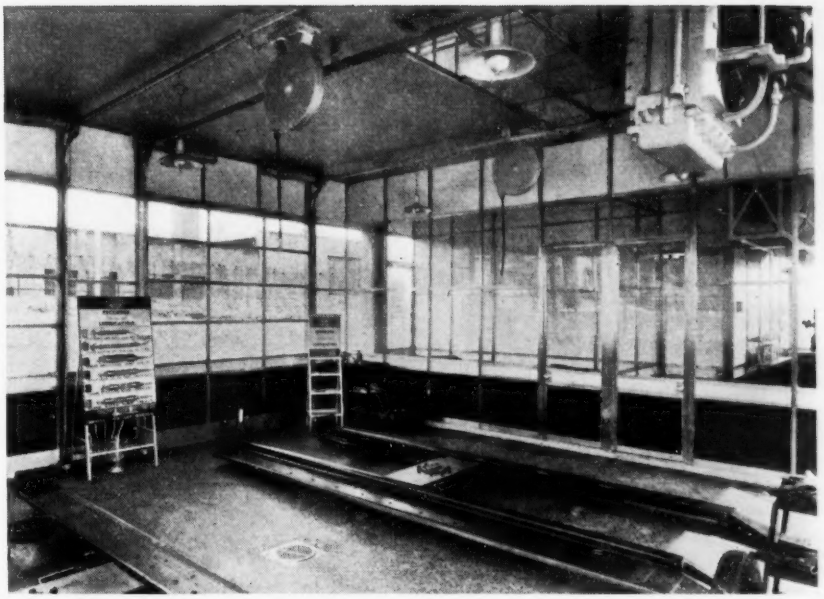
The roof is of skeleton construction, using six reinforced concrete columns with a reinforced concrete room deck, cantilevered outside the column line. As the live and dead load is small, only small column footings are required. The subfloor is of 4-inch thickness of concrete reinforced with 30-pound road-mesh. A terrazzo finish is laid on sub-base, except in equipment room, where a cement finish is used. A composition waterproof roof is applied over insulation laid on the concrete deck.

All exterior walls are simply curtain walls, or partitions, extending from floor to roof slab and supported by the floor and roof slab. They carry no load, except that of wind pressure. The interior partitions are built using the identical details of exterior walls. All units are interchangeable, being of the same dimensions.

These partitions are fabricated specially designed sections, using rust-resisting sheet steel. All exposed surfaces — inside and out—are covered with the proper gauge of stainless steel. All walk doors and the roll-up type lubritorium doors are of special design, carrying out in detail the design of the partition. Structural members of all doors are covered with stainless steel.

All hardware for doors and operating ventilators are of chromium plated material. Roll-up door tracks and operating hardware were cadmium plated. All swing doors are controlled with door checks.

The exterior and interior partitions are glazed with double faced porcelain enamel sheets or glass, as the design indicates. On the exterior, the lower band is of blue double face porcelain enamel; then a narrow band of white double face porcelain enamel; above the white bands glass is used entirely around the building, being of plate glass, except in men's, women's and equipment rooms, where Pyramid obscure glass was installed. Above this band of plate, or Pyramid glass, a band of white plate glass was placed. The top band of red plate glass is set back 1½-inch from the vertical surface to obtain the architectural effect desired.



Interior of lubrication department. Back of the partition in the center right is the general waiting room, and the station office is at the extreme right

Interior partitions are treated similarly to exterior partitions, using first the blue band of porcelain enamel and then the narrow band of white porcelain enamel. Between the waiting room and lubritorium, salesman room and lubritorium, waiting room and salesman room, plate glass was used above the narrow band of white porcelain enamel. From top of plate glass to ceiling—approximately the same height as the white plate glass on the exterior—white double face porcelain enamel was installed. All other interior partitions are glazed with white double face porcelain enamel panels above narrow white band to ceiling. The partition between women's room and other adjoining rooms is so constructed as to permit the use of two white single face porcelain enamel sheets on either side, with sound proof insulation placed between the two enamel sheets.

The display shelves are of steel construction, and all trim is of stainless steel. Cupboard doors under shelves have chromium plated frames and panels of blue single face porcelain enamel. You will note on the plan that a desk with money drawer is provided around a column. The concrete column at display shelves has a surrounding stainless steel frame with white plate glass panels inserted in the frame. The top of the display shelves is covered with black plate glass.

Thirteen grades of lubricating oil are dispensed from pressure tanks located under the floor in the equipment room and extended into sales room where faucets are located over a stainless steel drip pan. This arrangement uses practically no floor space and does not detract from the interior station design.

The electric light fixtures are of special modern design, made of aluminum materials. Small flood lights are provided to spot light the merchandise on display shelves.

The lifts are built to specification, having 15 feet 6 inches clear horizontal runways, permanent stops at one end, automatic chocks on all approach ramps, nonrotating device integral with slop-oil drainage arrangement, and lift light on each side of cross-head support. Control valve for each lift is located at the concrete column.

Three ceiling air reels of cast aluminum are installed as noted on plans. Three one pound hi-pressure booster lubrication guns are provided, permitting, if desired, three operators to work on two lifts. The booster guns are attached to ceiling reels by using quick couplers. An automatic air gauge provid-

ed with quick coupler is available for tire inflation.

A "point by point" lubrication chart is provided for each lift as noted. Between the two lifts is located a "point by point" gun board provided with special hand pressure guns to permit the proper lubrication of all cars as specified by the respective car manufacturers.

In the equipment room is placed a sufficient number of individual lockers. A 3-horsepower vertical mounted air compressor is used to conserve floor space. Ample storage room is provided for equipment, lubricating stock, battery testing and charging racks, etc.

The waiting room is furnished with two modern type lounge chairs, having chromium plated frame and red upholstered seats and backs. A magazine table is provided having cadmium plated frame and red porcelain enamel top. In the sales room a chromium plated desk chair is supplied. A chromium plated tire rack for storage and display of merchandise is located in the sales room attached to the ceiling, with ample head room under the rack. A telephone booth is provided in sales room accessible from waiting room.

The ceiling and columns are finished with aluminum paint, this being the only painted surfaces in the entire building.

The ceiling height of lubritorium is 12 feet 10 inches from the floor. The depth of lubritorium is 22 feet 6 inches and it is 11 feet 4 inches between lift centers and 7 feet from the center of lifts to side walls.

HEAT is provided by the installation of two gas burning unit heaters suspended from the ceiling. One is located in the center of the lubritorium at rear wall. The temperature is maintained as desired by controlling heater with a thermostat located on the column at the front of the room. A unit heater is placed in the equipment room and heat forced through a duct system to the waiting room, women's room, men's room and salesmen's room. The temperature is controlled by a thermostat placed in salesman room.

Design patent No. 86691 has been issued covering all special design features of this building.

The scheme of a super station development requires that each station be A STOP SIGN—one that instantly identifies itself far enough ahead to give the motorist ample time to get out of traffic and into the station. This is accomplished by a Neon trade mark sign, located to give the best visibility from all directions of approach and a **"standardized"** building located so as to afford the most attention value and still permit the customers every access to all services offered.

TO INVITE motorists to use the station a natural appeal is made by providing wide approaches built to permit them to enter and leave the station with the least possible interference from traffic.

Approaches are built of reinforced concrete of such thickness as to prevent their cracking or becoming uneven under heavy loads or poor sub-grade conditions. Driveways within the station are built of asphalt, the top sheet being of a composition that will prevent skidding in wet weather.

Flood lights of proper design are located to give maximum illumination of approaches. servicing area, building and driveways and without causing glare. The approaches, driveway area and building are more intensely illuminated than that of adjoining building and streets. Water and air servicing units are located so as to be easily accessible.

Entrance to the servicing area of the super station is conveniently located permitting easy access from gasoline dispensing units.

The space not utilized for building and driveways is attractively landscaped, mainly by using as large a grass area as possible, protected by concrete curbs and a careful use of hardy shrubs. The entire premises are maintained scrupulously clean and neat.

Standardized service is provided by carefully selected and trained salesmen permitting the motorist to receive all his requirements promptly and courteously—the presentation of the kind of services and merchandise available is so planned and executed as not to be offensive or tiresome to the customer. It is proposed to make available under the most favorable conditions a complete, satisfactory, courteous service to supply the motorist's every need.

In general, all activities are judged by their presentation, and in merchandizing the buying public pays you for thoughtful planning or ignores you for your lack of planning and judgment. Quality merchandise, conveniently available, at attractive locations, with prompt, expert and courteous salesmen should merit the public's favorable consideration, as the completed presentation represents the company's planning and best judgment in all its detail.

Gives Hints For Boosting Lubrication Jobs

CHICAGO, May 26.—A four-page mimeograph leaflet to help increase lubricating oil business of new car dealers is being published by Marquette Petroleum Products, Inc., 2301 S. LaSalle St. here. It is entitled the Marquette Lubricator and is devoted to sales suggestions, practical ideas and merchandising hints generally on lubrication.

The May issue tells how service men have sold radiator cleaning jobs, and transmission and differential lubrication business by pointing out the need of these services to the customer. When one service man discovered, for instance, how few motorists knew that shock absorbers needed filling regularly and that wheels should be taken off and bearings cleaned and repacked every 5000 miles, he pointed these things out to his customers and as a result increased his sales of shock absorbers fluid and cleaning jobs.

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67 Outlets in One Year

APPLETON, Wis.—Buth Oil Co., Barnsdall distributor in five counties here, has leased the bulk plant of the De Pere Home Oil Co., De Pere, Wis. The Buth company was organized about a year ago and already has established 67 outlets.

"Squatter" Outlets on West Coast Sell Oil at All Prices

By Jack Westsmith
N. P. N. Staff Writer

LOS ANGELES

PACIFIC coast marketers are having their troubles with low priced motor oils. The motorist gets a better bargain when he shops for oil in California than in the mid-west, but the type of outlets seem familiar.

They are the vacant lot "squatter" and the department stores. Dealer service stations have participated also. The dealer has seen gasoline profits vanish in recent price wars, and has tried to recoup through shading oil prices to stimulate sales. In recent months competition from department stores has decreased, it is said, but the "squatter" is in full bloom.

Prices are about what the "squatter" and department stores in mid-western cities are getting. Instead of a low of 12½ or 15 cents a quart, or from $1.95 up for five-gallon cans, the California motorist can buy oil at 5 or 10 cents a quart, and from 98 cents up for a five-gallon can.

To meet this competition several major California oil companies are offering low price motor oils to jobbers and selling "third grade" oil at company stations. Oil has been offered to jobbers, for more than a year, at 14 to 16 cents a gallon in 40 to 50-barrel lots. This oil in turn has been on sale at dealer stations, and has come in direct competition with company service station sales.

About a month ago Standard Oil Co. of California introduced "Flight" a third grade oil, at 15 cents a quart at service stations. This is the same brand name of its third grade gasoline. Other companies offering a low priced oil are Shell, Associated, Union, and Richfield.

The vacant lot "squatter" has become active within the past six months. As no license fee is required in Los Angeles, and only a superficial effort has been made to have them take out permits, an accurate check is not available, but one estimate places their number at 1000 in Los Angeles county.

Miniature golf course office in California returns to service as a vacant lot "squatter" oil sales place. There is little doubt as to the price of oil

In some sections, nearly every abandoned real estate and miniature golf course office has been converted into a "squatter" location. These offer curb service, also crankcase draining. The less affluent merchant brings his oil to location in his auto or truck and parks along the curb or on a vacant lot.

The stock generally consists of three grades, a western oil, eastern oil, and what is sold as a 100 per cent Pennsylvania oil, occasionally having a label and permit number of the Pennsylvania Grade Crude Oil Association. Following are the prices at a typical "squatter's" place: western oil, 5 cents a quart, or 98 cents for five-gallons; eastern paraffin base oil, 10 cents a quart, $1.98 for five gallons; and a 100 per cent Pennsylvania oil at 20 cents a quart, or $2.98 for five gallons.

Promoters have seen business possibilities in the "squatter" locations. Promoter will lease and stock a number of locations. These will be sub-let to ex-service men. The promoter has written agreement which gives him first claim on the anticipated compensation check of the operator.

The rise of the vacant lot "squatter" in the city has eclipsed the country roadside low priced oil outlet. A typical country dealer has storage space for 10,000 gallons of oil. He sold to the few "squatters" in town, also to passing motorists.

One country dealer advertised medium heavy grades of western oil at 5 and 7½ cents a quart, or five gallons of either at 80 cents. In lots of 15 or 20 gallons the price was 12 cents a gallon at the station.

Eastern oil, purchased from jobbers or compounders, sold at two quarts for 25 cents, or $1.50 for five-gallons. In large

An ex-real estate office converted into an oil store

lots the price was 22 cents a gallon. Several Pennsylvania oils were carried. One, S. A. E. 40, sold at 20 cents a quart, or $2.75 for five-gallons. Another oil, with a Pennsylvania label and permit, was $2.50, $2.75 and $3 for five-gallon lots, for the respective three grades. In lots of 15 or 20 gallons, individuals or station operators could buy this oil at 48 to 55 cents a gallon.

Competition from vacant lot "squatters" in the city has reduced this country outlet's volume by about half in the past month. Late last year this country outlet was selling between 30 and 40 gallons of oil daily, of this 15 per cent was single quart and crankcase drain sales.

Department store sales of low priced oils continue to be important, but the volume has suffered considerably in recent months by the influx of the "squatter."

Occasionally the department stores in Los Angeles offer a "special" on oil, as a trade puller. The price is at cost or slightly under. One general merchandising firm advertises western oils, manufactured by two different major refiners, at two quarts for 31 cents, or $1.08 for five-gallons. An eastern oil, blended in the west, is offered at $1.49 for five-gallons. A Pennsylvania oil, with the Association label and permit number, sells at $2.19 for five gallons. The volume of oil sold by department stores now is estimated to be 25 to 30 per cent less than a few months ago.

The west coast oil markets are complicated by an over abundance of oil. Any three of the six large refiners in California could supply all the lubricating oils needed. The supply is augmented by Mid-Continent bright stocks and neutrals, finished Mid-Continent, and Pennsylvania oils.

Low priced oils usually are handled through jobbers. A considerable portion of this type of oil has good specifications, but the disturbing factor is the large quantity of low-grade oil now flooding the western market.

California has a substitution law, adopted by the 1931 legislature, but the act was aimed directly at gasoline, and makes no effort to govern motor oils. Efforts are being made now to have a law enacted which will cover motor oils.

Distribution of untreated lubricating distillates as motor oil is held responsible for much of the cheap "western" oil. This distillate is manufactured by fly-by-night concerns that operate as demand warrants. There are about six such plants in southern California. They operate asphalt stills, using a crude lower than 14 gravity. In some instances the so-called motor oil has been found to be a steam refined cylinder stock cut with distillate.

This lube-distillate is the source of supply for many oils selling at 5 to 10 cents a quart retail, or about 10 cents a gallon wholesale. Typical specifications have a gravity of not over 19, a flash rarely over 325 degrees, and sometimes as low as 170 degrees, a fire of about 275 to 375 degrees, and a viscosity of 350 at 100 degrees.

Six months ago the sale of reclaimed crank case drainings was large on the west coast, but the importance of this source of low priced oil has declined rapidly, although it is still a factor.

In southern California there are eight reclaiming plants, with capacities ranging from 30 to 3000 barrels a month. At one time it was estimated that reclaimed oil on the market was between 300,000 and 400,000 gallons a month.

Competition of cut-price blended "eastern" oils has reduced this output to less than 175,000 gallons a month. One plant with a capacity of about 150,000 gallons a month is putting out only a third of this amount.

The larger reclaiming plants are essentially complete lube refineries and manufacture a good quality product. The working stock is collected from drainage pits at stations, garages, and commercial accounts. Sometimes the drainings are free for the taking, but often they are taken on contract at 2 cents a gallon. On an average two gallons of drainings yield about one gallon of saleable oil.

Reclaimed oil sells at a slightly higher price than western oils. In lots of 200 gallons the wholesale price ranges from 25 to 33 cents a gallon. In five-gallon lots the price is 40 cents a gallon for any grade. Jobbers buying in lots of 1000 gallons or more get a price of 15 to 22 cents a gallon.

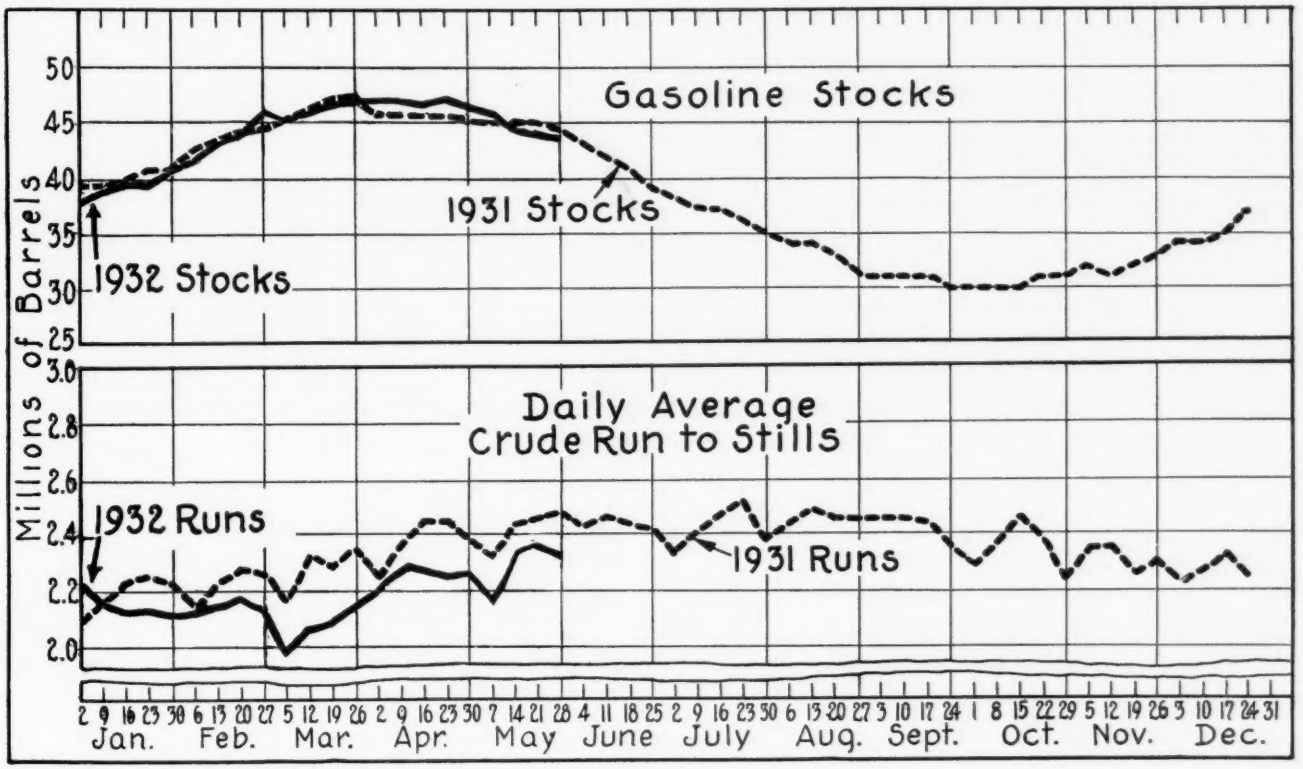
The larger plants distribute this oil under their own brand to service stations and jobbers. Gravities range from 23 to 25, flash point 425 to 460 degrees; fire 480 to 550 degrees, and viscosity 800 at 100 degrees.

Average Tax: 4.13c

NEW YORK, May 26.—Gasoline tax rates in May continued at the record high average of 4.13 cents a gallon, based on gasoline prices and tax rates in 50 representative cities, the American Petroleum Institute reports.

In January and February this year the average tax rate in these cities was 4.08 cents a gallon, and jumped to 4.13 cents in March and April. In January, 1931, the rate was 3.82 cents and advanced each of the first five months to 4 cents in May.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Bulk Gasoline Stocks Increased 150,000 Barrels

By Teletype
NEW YORK, June 1

AN INCREASE of 150,000 barrels in bulk gasoline stocks for the week ended May 28 was reported by refiners to the American Petroleum Institute. Daily average crude runs to stills were decreased 45,100 barrels.

Gasoline stocks at refineries were decreased, but this reduction was wiped out by a gain in gasoline in bulk terminals and in water borne transit to these terminals east of California. Refiner stocks for the week ended May 28 were reduced 366,000 barrels. Bulk terminal and transit stocks increased 516,000 barrels to a total of 16,535,000 barrels.

Texas gasoline stocks were reduced 282,000 barrels, and Indiana-Illinois district stocks 227,000 barrels. East Coast stocks increased 128,000 barrels, Oklahoma-Kansas district 14,000 barrels, and California 46,000 barrels.

Daily average crude runs to stills stood at 2,319,300 barrels for the week ended May 28. All districts reduced runs excepting East Coast, and Louisiana-Arkansas. Refiners operated at 63.3 per cent of capacity, as compared to 64.6 per cent for week ended May 21.

Production of cracked gasoline declined 18,200 barrels daily average for week ended May 28, to a total of 466,900 barrels. Indiana-Illinois refiners reduced runs 15,000 barrels daily average, California 3800 barrels, and Oklahoma-Kansas 2900 barrels. Increases were 3700 barrels in East Coast, and Texas 4000 barrels.

Fuel oil stocks increased 1114 barrels to a total of 126,660,000 barrels.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gas & Fuel Oil		% of Total Capacity Reporting	Cracked Gasoline Production Daily Av. Production (Barrels) Week Ended	
		May 28	May 21	May 28	May 21	May 28	May 21	May 28	May 21	May 28	May 28	May 21
East Coast	100.0	481,600	453,100	76.0	71.5	6,515	6,387	6,420	6,211	94.1	98,000	94,300
Appalachian	91.8	99,000	108,000	72.1	78.6	1,721	1,760	1,035	1,005	96.1	26,900	26,800
Ind., Ill., Ky.	98.9	290,200	306,700	67.3	71.1	6,318	6,545	4,029	4,122	95.5	77,700	92,700
Okla., Kans., Mo.	89.6	234,700	246,000	53.9	56.5	4,009	3,995	3,310	3,335	92.3	52,700	55,600
Texas	91.3	549,000	580,900	71.7	75.9	7,782	8,064	9,138	8,959	96.8	119,300	115,300
La., Ark.	98.9	169,100	164,100	73.4	71.2	1,840	1,853	4,653	4,726	100.0	35,000	37,100
Rocky Mountain	89.4	36,600	42,900	25.5	29.8	2,047	2,046	660	643	98.5	10,200	12,400
California	96.7	459,100	462,700	51.9	52.3	14,099	14,053	97,415	96,545	100.0	47,100	50,900
Total	95.1	2,319,300	2,364,400	63.3	64.6	44,337	44,703	126,660	125,546	95.6	466,900	485,100
Texas (Gulf Coast)	99.8	441,300	480,900	83.0	90.5	6,207	6,451	6,245	6,138	98.6	93,400	91,100
La. (Gulf Coast)	100.0	116,100	114,600	78.7	77.7	1,670	1,703	3,883	3,894	100.0	24,700	30,100

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended May 27 (By Teletype)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended May 27
Plants Reporting.....	10	23	23	10	10	76
Da. Av. Cap. (Bbls.)..	94,000	162,500	107,400	71,500	60,700	496,100
Da. Cracking Capacity	53,200	64,600	23,100	26,250	31,700	198,850
Da. Av. Crude Runs..	60,341 + 0.1	70,843 — 9.1	51,198 + 1.7	21,248 + 89.2	35,926 — 0.04	239,556 + 1.6
Da. Av. Other Oil....	7,743 + 25.6	2,728 + 87.8	2,631 + 81.2	25	15,189 — 7.3	28,316 + 11.2
GASOLINE—Gallons						
Stocks, May 20.....	37,947,000	47,579,000	30,369,000	11,776,000	6,113,000	133,784,000
Prod. 5-20 to 5-27....	11,058,000 — 0.1	12,885,000 — 3.9	7,477,000 — 11.3	2,346,000 +106.3	6,447,000 + 14.9	40,183,000 + 1.4
Ship. 5-20 to 5-27....	10,653,000 — 7.3	12,376,000 — 5.0	10,401,000 + 4.0	1,433,000 + 26.7	6,035,000 + 6.3	40,898,000 — 1.1
Stocks, May 27.....	38,352,000 + 1.1	48,088,000 + 1.1	27,415,000 — 9.7	12,689,000 + 7.8	6,525,000 + 6.7	133,060,000 — 0.5
Ratio Sales to Prod...	96.3%	96.0%	139.7%	61.1%	93.6%	101.8%
KEROSINE—Gallons						
Stocks, May 20.....	3,192,000	5,174,000	3,019,000	26,000	775,000	12,186,000
Prod. 5-20 to 5-27....	1,661,000 — 23.5	1,780,000 — 14.9	673,000 + 2.0	5,000 — 77.3	406,000 + 2.8	4,525,000 — 15.3
Ship. 5-20 to 5-27....	1,962,000 — 14.5	1,499,000 — 15.0	598,000 + 0.3	1,000 — 87.5	485,000 + 41.8	4,545,000 — 9.2
Stocks, May 27.....	2,891,000 — 9.4	5,455,000 + 5.4	3,094,000 + 2.5	30,000 + 15.4	696,000 — 10.2	12,166,000 — 0.2
Ratio Sales to Prod...	118.1%	84.2%	88.9%	20.0%	119.5%	104.4%
STOVE DISTILLATE—Gallons						
Stocks, May 20.....	1,781,000	2,490,000	138,000	29,000	59,000	4,497,000
Prod. 5-20 to 5-27....	511,000 + 11.3	858,000 + 50.2	....	....	56,000 — 48.6	1,425,000 + 14.2
Ship. 5-20 to 5-27....	496,000 + 25.9	483,000	26,000 — 36.6	6,000	56,000 — 44.6	1,067,000 + 4.7
Stocks, May 27.....	1,796,000 + ,0.8	2,865,000 + 15.1	112,000 — 18.8	23,000 — 20.7	59,000	4,855,000 + 8.0
Ratio Sales to Prod...	97.1%	56.3%	.....	.....	100.0%	74.9%
GAS OIL—Gallons						
Stocks, May 20.....	4,607,000	13,065,000	4,160,000	1,171,000	3,949,000	26,952,000
Prod. 5-20 to 5-27....	1,565,000 +140.8	273,000	287,000 + 35.4	77,000 + 87.8	2,054,000 — 6.8	4,256,000 + 63.4
Ship. 5-20 to 5-27....	1,903,000 +197.3	67,000 — 5.6	315,000 — 8.7	30,000 — 48.3	1,626,000 — 13.0	3,941,000 + 32.1
Stocks, May 27.....	4,269,000 — 7.3	13,271,000 + 1.6	4,132,000 — 0.7	1,218,000 + 4.0	4,377,000 + 10.8	27,267,000 + 1.2
Ratio Sales to Prod...	121.6%	24.5%	109.8%	39.0%	79.2%	92.6%
FUEL OIL—Gallons						
Stocks, May 20.....	14,463,000	51,577,000	85,740,000	10,640,000	17,734,000	180,154,000
Prod. 5-20 to 5-27....	4,385,000 — 15.7	2,903,000 — 32.0	5,544,000 + 15.1	3,794,000 + 97.5	3,582,000 + 5.4	20,208,000 + 3.1
Ship. 5-20 to 5-27....	4,544,000 + 23.8	4,220,000 + 32.8	3,635,000 — 33.3	2,718,000 + 11.9	3,913,000 + 1.1	19,030,000 — 1.5
Stocks, May 27.....	14,304,000 — 1.1	50,260,000 — 2.6	87,649,000 + 2.2	11,716,000 + 10.1	17,403,000 — 1.9	181,332,000 + 0.7
Ratio Sales to Prod...	103.6%	145.4%	65.6%	71.6%	109.2%	94.2%

Gasoline Produced by Various Methods, Week Ended May 27

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	6,168,000	55.8	7,600,000	59.0	4,252,000	57.1	1,903,000	81.1	2,681,000	41.6	22,604,000	56.3
Cracked.....	4,432,000	40.1	3,855,000	29.9	2,781,000	37.3	380,000	16.2	3,014,000	46.8	14,462,000	36.0
Natural.....	458,000	4.1	1,430,000	11.1	414,000	5.6	63,000	2.7	752,000	11.6	3,117,000	7.7
Total.....	11,058,000		12,885,000		7,447,000		2,346,000		6,447,000		40,183,000	

+ or — columns are % change over previous week.

Mid-Continent Gasoline Shipments Recede but Stocks Fall

By Teletype
TULSA, May 31

SHIPMENTS of gasoline from the Mid-Continent declined 400,000 gallons in the week ended May 27, as a result of lighter demand on Kansas and Oklahoma refineries. Movement from other parts of the region were larger than in the week before.

Crude oil runs were increased 3800 barrels daily average resulting in an increase in gasoline output of 560,000 gallons.

Gasoline stocks were reduced 720,000 gallons in the whole region when stocks were lowered 2,900,000 gallons in North Texas offsetting gains in other districts.

Kerosine stocks were virtually unchanged when a reduction in output offset a decline in shipments. There were small gains in distillate, gas oil and fuel oil stocks.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended May 27. Change in stocks figured from April 29.

GASOLINE

	Gallons
Production	160,928,000
Shipments	157,527,000
Net change in stock	+3,401,000
Ratio sales to production	97.9%

KEROSINE

Production	23,444,000
Shipments	22,044,000
Net change in stocks	+1,400,000
Ratio sales to production	94.0%

STOVE DISTILLATE

Production	4,855,000
Shipments	3,139,000
Net change in stocks	+1,716,000
Ratio sales to production	64.7%

GAS OIL

Production	15,866,000
Shipments	16,001,000
Net change in stocks	—135,000
Ratio sales to production.	100.9%

FUEL OIL

Production	80,932,000
Shipments	77,606,000
Net change in stocks	+3,326,000
Ratio sales to production	95.9%

Heavy Duty Folio

367—The best constructed folio we have developed. Made from the best 6-oz. smooth black cowhide. Comfortable handles made to carry all the weight, relieving the strain on the seams. Reinforced bottom protected with studs. Three pockets. Two inner cases may be carried.

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SUPERIOR OIL WORKS
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Refining 100% Penna. Crude exclusively for 32 years.

M. A. Keith Heads Supply Traffic Association

PARKERSBURG, W. Va., May 31.—Many important classification and rate matters were discussed at the annual spring meeting of the Oil & Gas Well Supply Traffic Association at Columbus, O., according to V. E. Milsark, traffic manager, The Parkersburg Rig & Reel Co., Parkersburg, and secretary of the association.

Officers elected to serve for the ensuing year are: M. A. Keith, general traffic manager, International-Stacey Corp., Columbus, president; C. R. Gartrell, traffic manager, Continental Supply Co., St. Louis, first vice-president; H. A. Bruner, traffic manager, Marion Machine, Foundry & Supply Co., Marion, Ind., second vice-president; R. S. Seibert, traffic manager, Lee C. Moore & Co., Pittsburgh, treasurer; and V. E. Milsark was elected secretary.

The association may be addressed in care of the secretary at P. O. Box 1063, Parkersburg, W. Va.

New Stations Building

Note: Material used in this column is taken principally from newspapers, NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Nashville, Tenn.—Spur Distributing Co., P. O., Box 299.

Memphis, Tenn.—Producers & Refiners Corp., Box 931, Memphis.

Thief River Falls, Minn.—Thief River Falls Oil Co., building stations at Goodrich and Oklie, Minn.

Ames, Ia.—George H. Bailey.

Hanska, Minn.—Arthur Kjelshus.

Battle Creek, Mich.—Thomas Stokes, Stokes Super Service, 64 South Division St.

Hanska, Minn.—Arthur Kjelshus.

Oskaloosa, Ia.—Burrell Cox.

Seymour, Ind.—Charles Combs.

Glenwood Springs, Col.—Carco Oil Co.

Fremont, O.—Hickok Oil Corp., Hi-Speed Bldg., Toledo, O.

Marshfield, Wis.—Claudia Johnson.

Eskridge, Kan.—O. H. Brown, Admire, Kan.

Winston-Salem, N. C.—American Oil Co., Baltimore, Md.

Paterson, N. J.—Irving Kitchell.

New Rochelle, N. Y.—Leopold Seidl.

Bulk Stations

Sault Ste. Marie, Mich.—Fuel Oil Corp., Woodland & G. T. R. R., Detroit, Mich.

Oskaloosa, Ia.—American 70 Corp., Lincoln, Nebr.

There is no slump in the human desire for

CONVENIENCE

NOT until he can groom and operate his car by merely twiddling his thumbs, will the average motorist stop buying accessories that save time, effort or inconvenience.

Introduce him to a set of Schrader Dublchek Valve Caps. Show him the twenty operations they save in inflating a set of five tires—and instantly his desire goes out of control. The sale is easy!

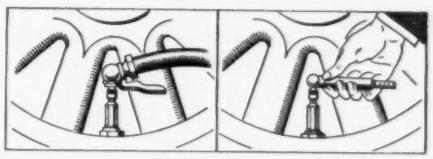
The Schrader Dublchek does away with the usual valve cap and dust cap. Besides making inflation, deflation and air-gauging a tire a matter of seconds instead of minutes, it represents:

- *A permanent cap that can't be lost.*
- *Guaranteed air-tightness up to 250 lbs. if affixed according to directions.*
- *An effective guard against dirt, dust and grit.*
- *A double check against loss of air.*

SCHRADER No. 7006 DUBLCHEK VALVE CAP

No dust and valve caps to unscrew and replace. Four operations saved on each tire.

INFLATE and TEST PRESSURE THRU VALVE CAP



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This good-looking International Model A-5, 3-ton semi-trailer, with 1,500-gallon tank, delivers gasoline and oil for The Tresler Oil Company, Norwood, Ohio.

IT IS sound economy and good business to keep your trucks properly maintained and to buy new trucks when the old ones need replacing. A fleet that always looks good "tells the world" about your products in a most effective way—and a *standardized* fleet not only adds to the advertising value of each unit, but also simplifies servicing and permits changing drivers from one truck to another without loss of efficiency.

Don't delay checking over your trucks. Put them in shape if need be. The longer the servicing is neglected the greater will be the depreciation. A thorough check-up will give you an estimate of the life left in your trucks and you can then plan a replacement program.

Call the nearest of 183 Company-owned branches in the United States and Canada, or an International Truck dealer. You will find them equipped to help you work out a servicing and replacement program. They will also show you the complete modern line of International Trucks and demonstrate the models you are interested in. There are sizes from ¾-ton to 7½-ton, and a wide range of wheelbase lengths for all types of equipment.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. OF AMERICA (Incorporated) **Chicago, Illinois**

INTERNATIONAL TRUCKS

Refinery - Tank Wagon Markets

Refinery Market Trading Continues Light; Retail Price Cutting Increases

CLEVELAND, May 31

TRADING continued relatively light in oil markets in the week ended May 28. Refiners in some areas reported a spurt in gasoline buying during the early days of the week from jobbers preparing for the Memorial Day holiday, but on the whole holiday buying was disappointing. Prices were a shade easier in some markets while in others they remained steady despite the dearth of activity.

Retail gasoline price cutting became more prevalent. Price wars brought a 2-cent cut over a large portion of Ohio, a 1-cent cut in third-grade gasoline in Chicago and reductions of 0.5 to 1.5 cent on all grades of gasoline throughout S. O. Kentucky territory.

Inter-refinery buying of gasoline continued on a fairly large scale in the Mid-Continent but it was insufficient last week to absorb the surplus available in the open market and prices reacted slightly as a result.

FOR your own business welfare, as well as for business generally, encourage profitable prices when you buy—

Because you want profitable prices when you sell.

You cannot sell your products at a profit, if the man who sells you has to do so at a loss.

This applies both to petroleum products and equipment.

Editor

The reaction was quite general in refinery markets throughout the middle west. Considerable confidence was placed in the hope that post-holiday demand would relieve the situation.

The New York market was down 0.25 cent on low octane gasoline and New England prices generally were 0.25 cent lower due largely to the bad retail conditions in those areas but elsewhere along the seaboard tank car prices were comparatively steady. Some price shading was reported but it was not sufficient to hurt general market prices.

Pennsylvania gasoline prices were steady. Offerings were more plentiful but no price concessions were reported to stimulate movement.

Tank car prices for burning oils were easier in most markets. Harvesting already is under way in some districts in the southwest, however, and demand for tractor fuel is expected to materialize earlier this year than is usually the case. Industrial fuels were quiet.

Inquiries for lubricating oils were reported more numerous both by Mid-Continent and Pennsylvania refiners and renewal of active buying of these oils is expected momentarily. Neutral oils were quoted slightly lower in Pennsylvania but bright stock and motor oil prices showed little change.

Gasoline Buying Fairly Active In Chicago Market

Staff Special

CHICAGO, May 28

MOST of the interest in the Chicago market in the week ended May 28 was caused by Standard of Indiana when it reduced third-grade gasoline 1 cent in metropolitan Chicago just prior to the Memorial Day holiday. The trade generally was of the opinion that this cut in itself would have no effect on the tank car market but might have some influence on jobber buying if they thought there was a possibility of other points being affected.

Spot gasoline buying, both from open market and contract jobbers, was quite active during the first two or three days of the week, but slowed down considerably after that. Several traders said their pre-holiday demand had come up to expectations while others said it was disappointing. Most of them, however, expected better buying next week, as jobbers were thought to have only small quantities in storage and a fairly good demand over the holidays would cut their stocks considerably.

Summary of Group 3 Quotations for U. S. Motor Gasoline
In Effect May 31, 1932

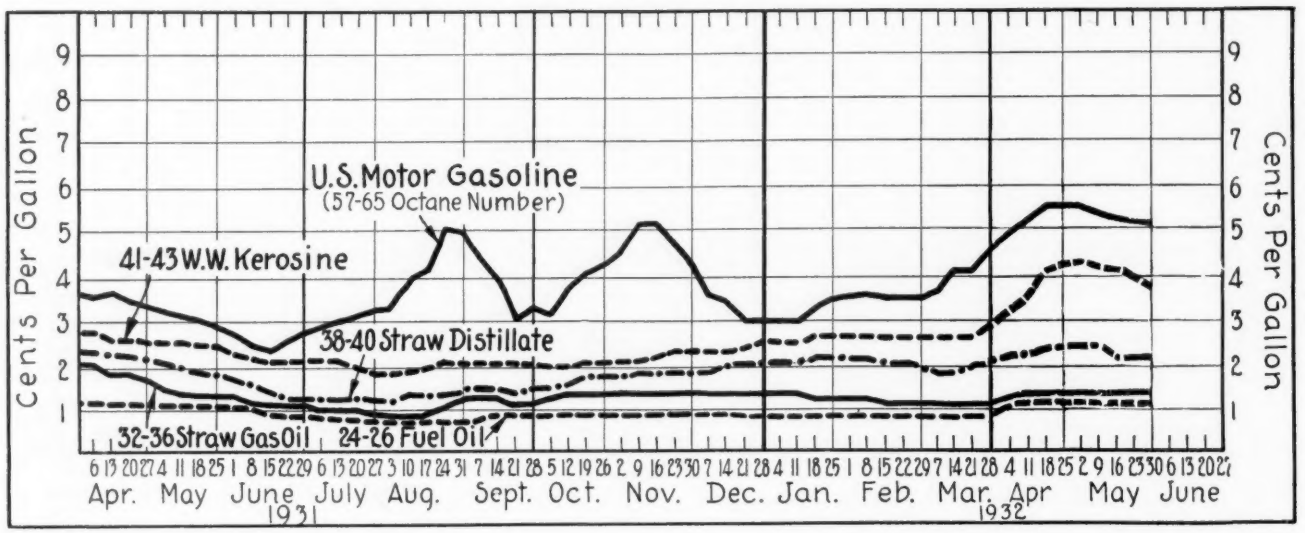
	Below 57 Octane No.	57-65 Octane No.	Above 65 Octane No.
Okla.	4.375-4.75	4.875-5.25	5.125-5.50
Kans.	4.375-4.75	4.875-5.25	5.125-5.25
N. Tex.	4.375-4.75	4.75-5.125	4.875-5.25
W. Tex.	4.375-4.75	4.625-5.125	5.00-5.25
La.-Ark.	4.375-4.75	4.875-5.25	5.125-5.50
Ind.-Ill.	4.25-4.50	.....	.....

Prices are those quoted on the basis of f.o.b. Group 3 by refiners in the districts designated.

Tank car gasoline prices showed the effects of better buying early in the week and moved up 0.125 cent. However, as demand slackened many of the traders who had advanced their prices moved back to their former levels. On May 23 quotations for U. S. Motor, below 57 octane number, were reported mostly at 4.375 to 4.5 cents. A number of traders who had advanced their prices to 4.375 cents May 23 reduced their quotations 0.125 cent later and on May 28 still were at 4.25 cents. Refiners in the Chicago district offered low octane Motor at 4.25 to 4.5 cents as the week ended.

A number of traders who handle lubricating oils in tank car lots reported a considerably improved demand for South Texas lubes. They attributed this to the usual seasonal

Current Prices of Principal Mid-Continent Refined Products



Prices shown are in Group 3 basis and extended to date shown in Refinery Market Table Section of this issue

increase and also to the fact that a number of major marketing companies have recently offered a third-grade competitive motor oil and are using a South Texas lube for this purpose.

Kerosine demand was reported decidedly light and prices continued to move to lower levels. Occasional reports were heard May 28 of 41-43 w.w. kerosine being offered at 3.375 cents, but most sellers refused to sell at under 3.625 cents.

Heavy oils were quiet and showed no change in price. Most of the interest at present continues to center on contracts for next year's burner oil season.

Western Reserve Club Reelects Ellinger

CLEVELAND, May 28.—A. C. Ellinger, Canfield Oil Co., was re-elected president of the Western Reserve Petroleum Club, for a third term, at a meeting of the club directors today.

W. Wishar, Sun Oil Co., was elected vice-president; and R. D. Sprague, National Refining Co., was re-elected secretary and treasurer. Directors added M. Guren, Parker Refining Co., to the board.

The board of directors will function also as a program committee to devise topics for discussion at meetings. Directors will meet on Monday noon two weeks prior to the regular monthly meetings. The present board was elected at the regular club meeting May 23.

Personnel Changes In A. P. I. Committees

NEW YORK, May 27.—Changes in the American Petroleum Institute's committees and sub-committees of working divisions recently include the following:

J. H. Ryan, superintendent, Gulf Refining Co., tank car department, succeeds C. K. Miller, of the same company on the Sub-Committee on Railroad Equipment.

Fayette B. Dow, Washington counsel, has been added to the Committee on Pipeline crossings under Railroad Tracks.

C. J. Nobmann, Shell Oil Co., San Francisco, has been appointed chairman of the California District Sub-Committee of the Production Division Tank Committee to succeed Ralph J. Reed, who remains as a member.

E. E. Shanor, Petroleum Iron Works, Co., Sharon, Pa., has been appointed a member of the Manufacturer's Sub-Committee on Riveted Tanks.

F. L. Maker, Standard Oil Co., of California, has been appointed chairman of a special sub-committee to study appurtenances for A. P. I. standard riveted tanks. Other members are: C. J. Nobmann, San Francisco. Walter Samans, Philadelphia; G. S. Bays, Tulsa; and F. T. Fendley, Houston.

William Schwemlein, Parkersburg, W. Va., has been appointed national secretary of the American Petroleum Institute Pig Iron Committee to succeed O. H. Attridge. B. Stanley Minor, San Pedro, has been appointed a member of the California district sub-committee to replace F. J. Swann. George S. Alten, Lancaster, O., has been appointed a member of the Manufacturer's Sub-Committee.

K. N. Saatjian, Los Angeles, has been appointed national secretary of the Wire Rope and Manila Cordage Committee to succeed Donald E. Dickey.

The following changes have been made in Pipe Committee personnel:

C. M. Scott, Stanolind Pipe Line Co., Tulsa, succeeds W. G. Heltzel, in the Mid-Continent district.

O. Q. Lomax, Humble Pipe Line Co., Houston, succeeds H. M. Stevenson, in the Texas district.

H. W. Ladd, Midwest Refining Co., Denver, and A. G. Dana, Prairie Oil & Gas Co., Parco, Wyo., have been appointed members of the Rocky Mountain district sub-committee.

B. E. Byrne, National Supply Co. of California, Torrance, succeeds D. S. Faulkner, in the California district.

Stuart Moser, Standard Oil Co. of

Prices A Year Ago

June 1, 1931

	Oklahoma	Penna.
58-60 U. S. Motor Gasoline	2.75-3.00	4.875-5.25
Grade A Natural Gasoline	1.875-2.00	.....
Kerosine (Okla. 41-43; Pa. 47 w.w.)	2.375-2.625	4.50-4.75
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.45-$0.50	2.50-2.75
Crude (Okla. 35-35.9)	$0.32	$1.75
Chicago tank wagon (including 3c tax)		14.00c

California, San Francisco, has been appointed a member of the Engineering Sub-Committee, 5-L; C. M. Scott, Stanolind Pipe Line Co., Tulsa, succeeds W. G. Heltzel; O. Q. Lomax, Humble Pipe Line Co., Houston, succeeds H. M. Stevenson, and Oscar Wolf, Texas Pipe Line Co., Houston, has been appointed a member of the same committee.

On the Manufacturer's Sub-Committee C. Wilson, Jr., Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa., replaces H. W. Bishop; W. R. K. Scott, Jones & Laughlin Steel Corp., Pittsburgh, replaces Alexander Milne; B. P. Hazeltine, Wheeling Steel Corp., Wheeling, replaces E. T. Wood, resigned; and R. Furrer, A. O. Smith Corp., Milwaukee, Wis., has been appointed a member.

Court Hears Arguments In Ouster Suit

AUSTIN, May 28.—Partial destruction of Attorney General James V. Allred's second amended petition seeking to oust 15 oil companies and two trade associations from Texas was seen after rulings on several special exceptions handed down this week by District Judge J. D. Moore.

Arguments on special exceptions were concluded May 27, until June 6 when further pleadings will be heard from defendants.

In its second amended petition, the state of Texas alleged that the conspiracy and series of conspiracies it charges the oil companies with perpetrating was started in 1919 when Standard of New Jersey purchased a controlling interest in the stock of Humble Oil & Refining Co.

Judge Moore ruled out this portion of the pleading early in the week and counsel for other defendants presented pleas that any transaction between the Standard of New Jersey and Humble had no bearing whatever on the business of other defendants.

Hines Baker, of counsel for Humble, spent two days arguing against what he termed promiscuous use of "conspiracy" and "series of conspiracies" used throughout the state's petition. He said the terms were prejudicial to the cause of defendants and that the words involve a legal conclusion of the petitioner not substantiated by facts.

The assertion of Attorney General Allred that Humble had attempted to dominate the oil business was characterized by Baker as strictly within the law and that it was no infringement on any statute if the concern desired to increase its business, so long as it did not seek to fix prices and exchange products, or output.

Mid-Continent Refinery Markets

Holiday Increases Gasoline Buying

Staff Special
TULSA, May 28

GASOLINE buying in anticipation of the Memorial Day Holiday demand gave the Mid-Continent market much needed support the week of May 23 to 28.

Refiners early in the week reported their orders had shown a sizeable increase as compared with earlier weeks in the month. Regular accounts sent in orders with requests for rush shipment, the purchases to be applied against contracts. Several refiners who have marketing divisions in the middle west also reported their divisions were ordering rush shipments, which was taken as an indication the retail dealers were filling their station tanks preparatory to the expected week end-holiday demand.

Refiners selling mostly in the open market also reported their shipments had increased, jobbers buying in the open market apparently being just as anxious to get their purchases rolling as quickly as possible.

This spot market demand, however did not hold up as well late in the week as had the contract demand. Several refiners said that a noticeable decline in spot orders was experienced beginning Friday. Favorable weather over the holidays, however, was expected to cause a resumption of this buying early next week as soon as jobbers had had an opportunity to check their stocks.

The buying kept prices fairly stable throughout the week. The middle and higher octane gasolines were still scarce except for shipment on contract and little spot market trading was reported in those grades.

The low octane gasoline was absorbed most of the week by inter-refinery buying and there were only occasional distress offerings reported in the market.

The demand increased sufficiently, in fact, that marketers reported late in the week their buying prices had increased 0.125 to 0.25 cent although no changes were made in quotations to jobbers.

There were, as the week ended, only two or three "easy" spots in the Oklahoma gasoline market. Most of the gasoline in those spots had a very low octane rating. One or two refiners in Kansas reported they were a little long on gasoline but received sufficient relief from other refiners late in the week to keep them from having to "dump" any in the open market.

Texas also was in fairly good position except for one or two spots which were being handled by inter-refinery buying as much as possible. The Louisiana and Arkansas refiners reported they were in fairly good shape as far as stocks and current orders were concerned.

Natural gasoline was sluggish throughout the week. The largest demand apparently was for low vapor pressure or "butane free" natural gasoline. Grade 26-70 was in light demand and distress offerings were made periodically by one or two sellers who were behind on shipping instructions on material bought earlier in the month.

Kerosine was less active in all districts and prices lost some ground. Refiners in the Texas Panhandle, however, reported the wheat harvest had started there May 23 which is unusually early, they said, and they accordingly were anticipating some increase in kerosine demand early in June.

Distillate demand was light except in Texas where the harvest had started but it was considered doubtful if any noticeable increase in buying generally would result from the harvest demand. The "harvest" usually gives jobbers an opportunity to work off any excess stocks held over from the winter demand.

Gas oil was quiet with prices for the most part unchanged. Fuel oil demand was steady and prices showed no changes in the course of the week. The zero fuel oils were extremely scarce in Oklahoma and buyers were having to look elsewhere for much of their requirements.

Bright stock demand was improved somewhat in a few quarters during the week. Inquiries for export shipment were more numerous although no sizeable orders were reported to have been placed.

Neutral oils were in steady demand at unchanged prices.

Refiners making wax reported demand was exceptionally light just at present and prices were somewhat lower.

BERKELEY, Calif. — Ralph H. Smith has been appointed exclusive representative in southern California for oil equipment made by Shand and Jurs Co. here. The company's Los Angeles office and warehouse is at 1333 Santa Fe Ave.

Chicago Tank Car Market

Following prices represent majority of sales to jobbers on Group 3 freight basis, although shipments may originate in other refining districts, such as North, West and East Texas, Louisiana, Arkansas Indiana, Illinois, Kentucky, etc.

	Prices May 31	Prices May 23	Prices May 16
50-52, 437 e.p. naphtha	4.25 – 4.50	4.25 – 4.50	4.375– 4.50
U. S. Motor Gasoline:			
Below 57 octane number	4.25 – 4.50	4.375– 4.50	4.375– 4.625
57-65 octane number	4.75 – 5.00	4.75 – 5.00	4.75 – 5.125
Above 65 octane number	5.00 – 5.25	5.00 – 5.25	5.125– 5.375
60-62 400 e.p. gasoline:			
Below 57 octane number	4.375– 4.625	4.50 – 4.625	4.50 – 4.75
57-65 octane number	4.875– 5.25	4.875– 5.25	4.875– 5.25
Above 65 octane number	5.125– 5.375	5.125– 5.375	5.125– 5.625
64-66 375 e.p. gasoline	4.75 – 5.00	4.75 – 5.00	4.875– 5.125
68-70 350-360 e.p. gasoline	4.875– 5.125	4.875– 5.125	5.00 – 5.25
*Domestic Aviation Gasoline, below 73 octane number	5.125– 5.50	5.125– 5.50	5.375– 5.75
41-43 w.w. kerosine	3.625– 3.875	3.75 – 4.00	3.875– 4.125
42-44 w.w. kerosine	3.75 – 4.00	3.875– 4.125	4.125– 4.25
38-40 p. w. distillate	2.125– 2.25	2.125– 2.25	2.125– 2.25
38-40 straw distillate	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125
32-36 ordinary dark gas oil	1.25	1.25	1.25
32-36 dark zero gas oil	1.625– 1.75	1.75	1.75
32-36 straw zero gas oil	1.75 – 1.875	1.875– 2.00	1.875– 2.00
28-30 zero fuel oil (per bbl.)	$0.525–$0.575	$0.525–$0.575	$0.525–$0.55
28-30 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.425–$0.475
24-26 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.325–$0.35
18-22 fuel oil (per bbl.)	$0.225–$0.275	$0.225–$0.275	$0.225–$0.25
18-22 zero fuel oil (per bbl.)	$0.275–$0.325	$0.275–$0.325	$0.275–$0.30
14-16 fuel oil (per bbl.)	$0.20 –$0.225	$0.20 –$0.225	$0.20 –$0.225

Naphtha and Solvent

Tank car prices for naphthas and solvents quoted by Chicago sellers are:

	May 31		May 23	
	F.O.B. Group 3 Basis	F.O.B. Chicago District	F.O.B. Group 3 Basis	F.O.B. Chicago District
Stoddard Solvent	5.00 – 5.75	7.00 – 9.00	5.25 – 5.75	7.00 – 9 00
V.M. & P. Naphtha	5.50 – 6.25	7.50 – 8.50	5.50 – 6.25	7.50 – 8.50
Cleaners Naphtha	6.00 – 6.50	9.00	6.00 – 6.50	9.00
Oleum Spirits	4.75 – 5.25	6.00 – 7.00	4.75 – 5.25	6.00 – 7.00
Rubber Solvent	6.00 – 6.25	10.00	6.00 – 6.25	10.00
Lacquer Diluent	7.50 – 8.50	12.50	7.50 – 8.50	12.50

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at 122°-167°F.; 50% at 221°; 90% at 311°; 96% at 347°; end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

Aldrin Heads Stanavo Aviation Board

NEW YORK, May 31.—The eighth annual meeting of the Stanavo Specification Board, Inc. was held at Dayton, O., recently, at which time Major E. E. Aldrin, aviation manager of the Standard Oil Co. of New Jersey, was elected president of the board. The function of the board is to develop and promote high grade aviation petroleum products for the Standard Oil Companies of New Jersey, Indiana and California. Its first development was Stanavo airplane engine oil which was placed on the market in 1929. Some time after that came Stanavo aviation gasoline.

Major Aldrin, who was largely responsible for the formation of the Stanavo Specification Board, has been a vice-president and director of the company since its organization in 1929.

Other officers elected by the board were: Capt S. S. Chadderton, Standard Oil Co. of California, vice-president; J. P. Porter, Standard Oil Co. (Indiana), vice-president; R. P. Resor, treasurer; H. M. McLarin, secretary; and Shepard Dudley, executive secretary.

Directors attending the meeting, besides Major Aldrin, Capt. Chadderton and Mr. Porter were: Dr. J. B. Terry, Standard Oil Co. of California; Dr. D. P. Barnard IV, Standard Oil Co. (Indiana); and D. C. Jennings, Standard Oil Co. of New Jersey.

The board visited the Air Corps Laboratories at Wright field, Dayton during the meeting, where testing and research work on aviation fuels and lubricants is being carried on by the Air Corps technicians and the Stanavo Board technical committees.

Butane Plant Opened in Canada

TORONTO—What is said to be the largest butane-air gas plant in the world was opened May 17 at Three Rivers, Que., by the City Gas & Electric Corp., Ltd. It was the first one to be opened in Canada. It has the largest butane-air gas holder in existence.

Liquid butane is shipped to the plant in tank cars. The storage tank has a capacity of 21,000 gallons. The plant was designed by Carbide & Carbon Chemicals Corp., New York City.

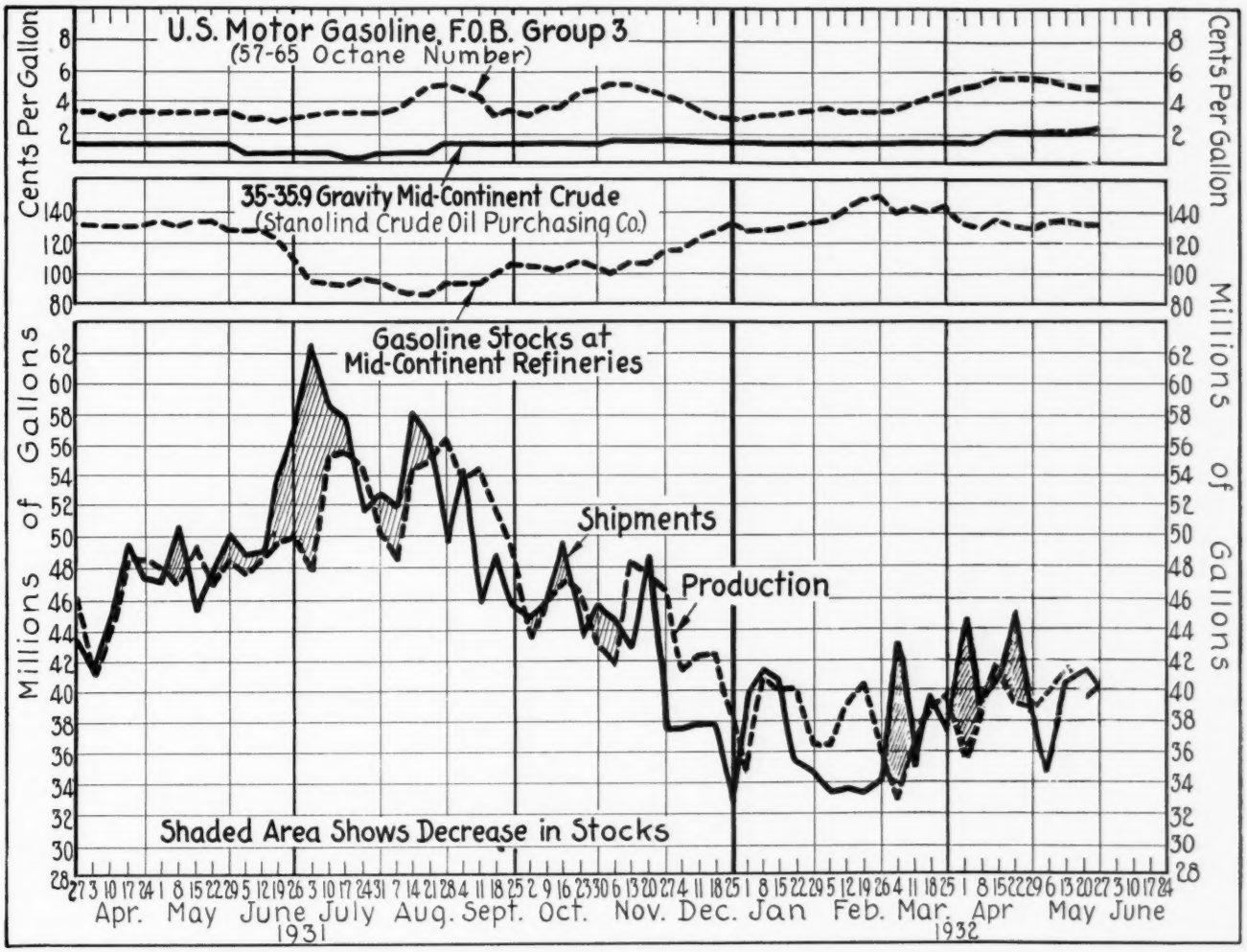
Building Refinery in Canada

TORONTO, June 1.—An order for an atmospheric distillation unit has been placed with Foster Wheeler Limited, Toronto and Montreal by Joseph Elie, Ltd., which is building a refinery at East Montreal, Que. The equipment will be manufactured by Foster Wheeler at the St. Catherines, Ont. works of the company.

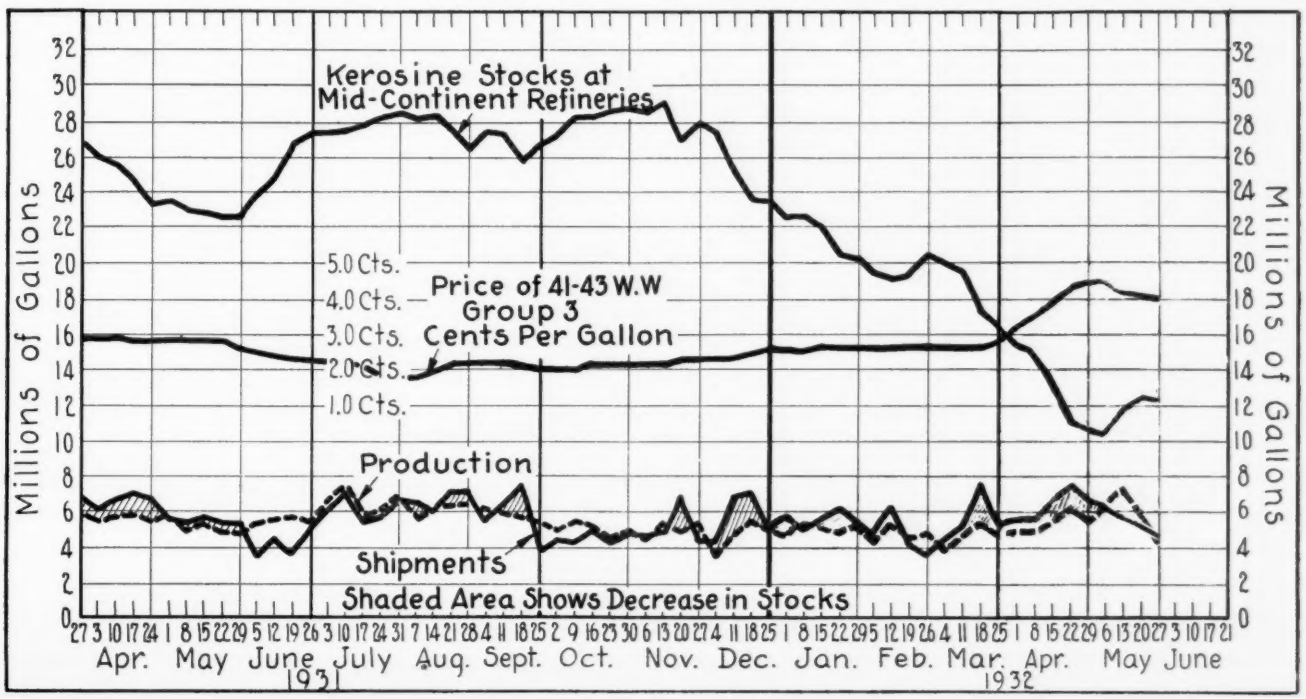
The latter will have charge of the construction of the entire plant.

Barometer of Mid-Continent Refinery Market—Week Ending May 27

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 39 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 58



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown, in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices May 31	Prices May 23	Prices May 16
51-52 450 e.p. naphtha..	4.375- 4.625	4.50 - 4.75	4.75
U. S. Motor Gasoline			
Below 57 octane number	4.375- 4.75	4.50 - 4.75	4.625- 4.75
57-65 octane number....	4.875- 5.25	5.00 - 5.25	5.25
Above 65 octane number	5.125- 5.50	5.25 - 5.50	5.50
60-62, 400 E.P. Gasoline			
Below 57 octane number	4.50 - 4.875	4.50 - 4.875	4.625- 5.00
57-65 octane number...	5.00 - 5.375	5.125- 5.375	5.375- 5.50
Above 65 octane number	5.25 - 5.625	5.375- 5.625	5.625- 5.75
64-66, 375 E.P. Gasoline	5.00 - 5.25	5.125- 5.25	5.25
68-70 350-360 e.p. gasoline	5.125- 5.375	5.25 - 5.375	5.375
‡Domestic Aviation Gasoline, below 73 Octane number.....	5.125- 5.50	5.125- 5.50	6.00

‡Prices based on U. S. Gov't. specifications or better. Present Gov t. specifications require distillation range of 5% recovery at 122°-167°F.; 50% at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	6.375- 6.50	6.375- 6.50	6.375- 6.50
54-56 Naphtha.....	6.50 - 6.625	6.50 - 6.625	6.50 - 6.625
U. S. Motor (58-62°)....	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75
64-66 390 e.p. gasoline...	6.625- 6.875	6.625- 6.875	6.625- 6.875
68-70 350-360 e.p.....	6.875- 7.00	6.875- 7.00	6.875- 7.00

OHIO (Quotations of S. O. Ohio. 4c state tax to be added. Delivered any point in Ohio.)

U. S. Motor Gasoline....	8.25	8.25	8.25
60-65 Octane number ...	8.50	8.50	8.50

KANSAS (F. o. b. refinery, Kansas destination)

U. S. Motor Gasoline			
Below 57 octane number	4.75 - 5.00	4.75 - 5.00	4.875- 5.125
57-65 octane number...	5.25 - 5.50	5.25 - 5.50	5.375- 5.625
Above 65 octane number	5.50 - 5.75	5.50 - 5.75	5.625- 5.875
60-62 400 e.p. gasoline....	5.00 - 5.25	5.00 - 5.25	5.125- 5.375
64-66 375 e.p. gasoline....	5.25 - 5.50	5.375	5.375- 5.625

NORTH TEXAS (F. o. b. North Texas refineries)

U. S. Motor Gasoline			
Below 57 octane number	4.375- 4.75	4.50 - 4.75	4.50 - 4.75
57-65 octane number...	4.75 - 5.125	4.875- 5.125	4.875- 5.125
Above 65 octane number	4.875- 5.25	5.00 - 5.25	5.125- 5.25
60-62 400 e.p. gasoline....	4.50 - 4.875	4.625- 4.875	4.75 - 5.00
64-66 390 e.p. gasoline...	4.875- 5.125	5.00 - 5.25	5.00 - 5.25
64-66 375 e.p. gasoline...	4.875- 5.125	5.00 - 5.25	5.00 - 5.25
68-70 350-360 e.p. gasoline	5.125- 5.25	5.25	5.25

WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

U. S. Motor Gasoline			
Below 57 Octane number	4.375- 4.75	4.50 - 4.75	4.50 - 4.75
57-65 Octane number....	4.625- 5.00	4.75 - 5.00	5.00 - 5.25
Above 65 Octane number	5.00 - 5.25	5.125- 5.25	5.25 - 5.50

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

U. S. Motor Gasoline			
Below 57 Octane number	4.875	4.875	5.25
57-65 Octane number....	5.25	5.25	5.625
Above 65 Octane number	5.50	5.50	5.875

ARKANSAS (Ark., N. La., and Miss. destination)

U. S. Motor Gasoline			
Below 57 Octane number	4.875	4.875	5.25
57-65 Octane number....	5.25	5.25	5.625
Above 65 Octane number	5.50	5.50	5.875

†Prices Nominal. ††Only one refiner quoting. *Quotations only.

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

	Prices May 31	Prices May 23	Prices May 16
54-58 U.S. Motor 437 e.p.	4.75 -10.00	4.75 - 7.00	5.00 - 7.50
54-58 U.S. Motor, for outside state shipment....	4.75 - 5.75	4.75 - 6.00	4.75 - 6.00
42-45 Engine Distillate 445-480 e.p.....	5.00 - 6.00	5.00 - 6.00	5.00 - 6.00

NATURAL GASOLINE

OKLAHOMA (F. o. b. Group 3)

‡Grade 26-70.....	1.75	1.875- 2.00	1.875

NORTH TEXAS (F. o. b. Brechenridge)

‡Grade 26-70.....	1.75	1.75 - 1.875	1.875

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	4.25 - 5.00	4.75 - 5.25	4.50 - 5.25

‡On inquiries for other grades of natural gasoline, majority of manufacturers quote prices 10 to 15% above or below Grade 26-70 for each 4 pounds difference in vapor pressure between the grade desired and that of Grade 26-70.

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosine.....	4.875- 5.125	4.875- 5.125	5.00 - 5.125
46 w.w. kerosine.....	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
47 w.w. kerosine.....	5.25 - 5.50	5.25 - 5.50	5.25 - 5.50

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosine.....	3.625- 4.00	3.875- 4.25	4.125- 4.25
42-44 w.w. kerosine.....	3.875- 4.125	4.00 - 4.375	4.25 - 4.50

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosine.....	4.125- 4.375	4.375- 4.50	4.375- 4.50
42-44 w.w. kerosine.....	4.50 - 4.625	4.50 - 4.625	4.50 - 4.625

NORTH TEXAS (F. o. b. North Texas refineries)

41-43 w.w. kerosine.....	3.625- 4.00	3.875- 4.125	4.125

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosine.....	3.875- 4.00	4.25	4.50

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w.w. kerosine.....	3.875- 4.00	4.25	4.50

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosine.....	4.00 - 5.00	4.00 - 5.00	4.00 - 5.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Viscous Neutrals

Vis	(Viscosity at 70° F.)		
200 No. 3 color, 420-425 flash:.....			
Zero pour test.....	22.00 -23.00	22.00 -23.00	22.00 -23.00
10 pour test.....	21.00 -22.00	21.00 -22.00	21.00 -22.00
15 pour test.....	19.00 -20.00	19.00 -20.00	19.00 -20.00
25 pour test.....	17.00 -17.50	17.25 -18.00	17.50 -18.00
30 pour test.....	16.50 -17.00	17.00 -17.50	17.25 -17.50
180 No. 3 color, 410-415 flash:.....			
25 pour test.....	15.00 -16.00	15.00 -16.00	15.00 -16.00
150 No. 3 color, 400-405 flash:.....			
Zero pour test.....	14.50 -16.00	14.50 -16.00	14.50 -16.00
10 pour test.....	14.00 -15.00	14.00 -15.00	14.00 -15.00
15 pour test.....	13.50 -14.50	13.50 -14.50	13.50 -14.50
25 pour test.....	12.00 -12.25	12.00 -12.50	12.25 -12.50
30 pour test.....	11.75 -12.00	12.00 -12.25	12.00 -12.25

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis.	Color	Prices May 31 (Viscosity at 100° F.) 0 to 10 Pour Point	15 to 30 Pour Point	Prices May 23 (Viscosity at 100° F.) 0 to 10 Pour Point	15 to 30 Pour Point
100	No. 2	4.50	4.00 – 4.25	4.50	4.00 – 4.25
150	No. 3	6.50	6.25	6.50	6.25
150	No. 4	6.00 – 6.25	5.75 – 6.00	6.00 – 6.25	5.75 – 6.00
180	No. 3	7.75	7.25 – 7.50	7.75	7.25 – 7.50
180	No. 4	7.25 – 7.50	7.00 – 7.25	7.25 – 7.50	7.00 – 7.25
180	No. 5	7.00 – 7.25	6.75 – 7.00	7.00 – 7.25	6.75 – 7.00
200	No. 3	8.50	8.00	8.50	8.00
200	No. 4	8.25	7.50 – 7.75	8.25	7.50 – 7.75
200	No. 5	7.75	7.25	7.75	7.25
220	No. 3	9.25 – 9.50	9.00	9.25 – 9.50	9.00
220	No. 4	9.00 – 9.25	8.50 – 8.75	9.00 – 9.25	8.50 – 8.75
220	No. 5	8.75 – 9.00	8.50	8.75 – 9.00	8.50
240	No. 3	10.00 –10.50	9.50	10.00 –10.50	9.50
240	No. 4	9.50 – 9.75	9.00 – 9.25	9.50 – 9.75	9.00 – 9.25
240	No. 5	9.50	9.00	9.50	9.00
280	No. 3	11.50 –11.75	11.00	11.50 –11.75	11.00
280	No. 4	10.50 –11.00	10.00 –10.50	10.50 –11.00	10.00 –10.50
280	No. 5	10.75	10.25	10.75	10.25

SOUTH TEXAS (F. o. b. South Texas refineries)

Vis.	Color	Prices May 31 (Viscosity at 100° F., pour test 0)	Prices May 23	Prices May 16
200	No. 3 Pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
300	No. 3 Pale	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
500	No. 3½ Pale	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
750	No. 4 Pale	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
1200	No. 4 Pale	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
200	No. 5½ Red Oil	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
300	No. 5½ Red Oil	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
500	No. 6 Red Oil	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
750	No. 6 Red Oil	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
1200	No. 5-6 Red Oil	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50

Note: Red oil prices shown above cover oils with blue cast; one or two refiners ask 0.5c to 1c per gallon higher for green cast red oils.

CALIFORNIA (F. o. b. California refineries)

Vis.	Color	(Viscosity at 100° F.)		
100	No. 3	8.00	8.00	8.00
200	No. 3	8.00	8.00	8.00
300	No. 3	8.50	8.50	8.50
450	No. 3	10.00	10.00	10.00
550	No. 3	11.00	11.00	11.00
600	No. 3	11.50	11.50	11.50
280	No. 5	8.00	8.00	8.00
300	No. 5	8.50	8.50	8.50
400	No. 5	9.50	9.50	9.50
500	No. 5	10.50	10.50	10.50
600	No. 5	11.50	11.50	11.50
700	No. 7	12.50	12.50	12.50

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Prices represent quotations and sales).

190-200 Vis. D at 210° Brt. St.	22.00	22.00	22.00
150-160 Vis. D at 210° Brt. St.:			
0-10 cold test	21.00	21.00	21.00
10-25 cold test	20.50	20.50	20.50
25-40 cold test	20.00	20.00	20.00
150-160 Vis. E 210° Brt. St.	20.00	20.00	20.00
600 St. Ref. Olive Green	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00
600 St. Ref. Dark Green	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
Black Oil	2.00 – 2.25	2.00 – 2.25	2.00 – 2.25

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	14.00 –14.50	14.00 –14.50	14.00 –14.50
650 Steam Refined	16.50 –17.00	16.50 –17.00	16.50 –17.00
600 Flash	17.50 –18.00	17.50 –18.00	17.50 –18.00
630 Flash	22.50 –23.00	22.50 –23.00	22.50 –23.00
600 Warren E	16.75 –17.25	16.75 –17.25	16.75 –17.25
Bright Stock, No. 8 color, 140-150 vis. at 210°, 540-550 flash:			
10 pour test	27.50 –28.50	27.50 –28.50	27.50 –28.50
15 pour test	25.00 –26.00	25.00 –26.00	25.00 –26.00
25 pour test	24.00 –24.50	24.00 –24.50	24.00 –24.50
35 pour test	23.50 –24.00	23.50 –24.00	23.50 –24.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	1.875– 2.00	1.875– 2.00	1.95 – 2.00
124-126 white crude scale, a.m.p.	2.00 – 2.125	2.00 – 2.125	2.00 – 2.25

††Only one refiner quoting. †Prices Nominal.

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

	Prices May 31	Prices May 23	Prices May 16
124-126 White Crude Scale, a.m.p.	1.625– 1.875	1.75 – 2.00	1.75 – 2.00

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50

OKLAHOMA (F. o. b. Oklahoma refineries)

38-40 straw distillate	2.125– 2.25	2.125– 2.25	2.125– 2.25
36-38 straw distillate	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125
32-36 straw gas oil	1.375– 1.50	1.375– 1.50	1.375– 1.50
32-36 straw gas oil zero	1.875– 2.00	1.875– 2.00	1.875– 2.00
32-36 dark gas oil	1.375– 1.50	1.375	1.375– 1.50
32-36 dark gas oil zero	1.875	1.875– 2.00	1.875– 2.00
28-30 fuel oil, zero (per bbl.)	$0.55	$0.55	$0.55
28-30 fuel oil (per bbl.)	$0.475	$0.475	$0.475
26-28 fuel oil (per bbl.)	$0.45 –$0.475	$0.45 –$0.475	$0.45 –$0.475
24-26 fuel oil (per bbl.)	$0.425–$0.45	$0.425–$0.45	$0.425–$0.45
22-26 fuel oil (per bbl.)	$0.425	$0.425	$0.425
18-22 fuel oil (per bbl.)	$0.40	$0.40	$0.40
16-20 fuel oil (per bbl.)	$0.375–$0.40	$0.375–$0.40	$0.375–$0.40
14-16 fuel oil (per bbl.)	†$0.375	†$0.375	†$0.375

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	2.50 – 2.625	2.50 – 2.625	2.50 – 2.75
36-38 straw distillate	2.375– 2.50	2.375– 2.50	2.375– 2.50
32-36 straw gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
18-22 fuel oil (per bbl.)	$0.40 –$0.45	$0.40 –$0.45	$0.40 –$0.45
10-14 fuel oil (per bbl.)	$0.30 –$0.35	$0.30 –$0.35	$0.35 –$0.40

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.00 – 2.25	2.125– 2.25	2.125– 2.25
38-40 p.w. treated distillate	††3.00	2.375	2.375
32-36 gas oil, cracked	1.75 – 1.875	1.75 – 1.875	1.75 – 1.875
32-36 St. reduced gas oil	1.375– 1.50	1.375– 1.50	1.375– 1.50
24-26 fuel oil (per bbl.)	$0.50	$0.50	$0.50
20-24 fuel oil (per bbl.)	$0.45	$0.45	$0.45
18-22 fuel oil (per bbl.)	$0.40	$0.40	$0.40

WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

30-32 gas oil	1.625– 1.75	1.625– 1.875	1.625– 1.875
28-30 gas oil, zero	1.625– 1.75	1.625– 1.875	1.625– 1.875
18-22 fuel oil (per bbl.)	$0.325–$0.375	$0.35 –$0.40	$0.35 –$0.40

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil	2.00	2.00	2.00
32-36 gas oil, zero	2.25	2.25	2.25
14-16 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.375–$0.45

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil	2.00	2.00	2.00
32-36 gas oil, zero	2.25	2.25	2.25
28-30 gas oil	2.00	2.00	2.00
20-24 fuel oil (per bbl.)	$0.45 –$0.50	$0.45 –$0.50	$0.45 –$0.50
9-12 fuel oil (per bbl.)	$0.375	$0.375	$0.35 –$0.375

CALIFORNIA (F. o. b. refinery.)

14-18 fuel oil (per bbl.)	$0.40 –$0.55	$0.40 –$0.55	$0.40 –$0.55
14-18 Bunker oil (per bbl.)	$0.55 –$0.65	$0.55 –$0.65	$0.55 –$0.65
30-34 gas oil (per bbl.)	$0.70 –$0.85	$0.65 –$0.85	$0.65 –$0.85
27 Plus Diesel oil (per bbl.)	$0.70 –$0.85	$0.65 –$0.85	$0.65 –$0.85

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. Penna. refinery. In tank cars ½c to ¾c per pound less.) Quotations are from majority of refiners.

Snow White	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
Lily White	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cream White	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00
Light Amber	2.25 – 2.75	2.25 – 2.75	2.25 – 2.75
Amber	1.875– 2.25	1.875– 2.25	1.875– 2.25
Red	1.75 – 2.00	1.75 – 2.00	1.75 – 2.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

(Per ton in car lots)

Lump	$3.00 –$4.00	$3.00 –$4.00	$3.00 –$4.00
Still run	$2.00	$2.00	$2.00
Breeze	$0.75 –$1.00	$0.75 –$1.00	$0.75 –$1.00

*Quotations only. **Prices represent quotations and sales.

New Refining Patents

Heat Transfer. U. S. P. 1 847 542, March 1, 1932, application filed Dec. 13, 1924; Justin F. Wait, assignor to Sun Oil Co.

IN THE boiling mercury method of heat transfer, the advantages of the method are not fully attained unless the contact is with metals wetted by liquid mercury.

Hence, in order to derive utmost advantage from the process, equipment design has been adapted to permit such wetting more readily, and it has been found profitable to increase the thickness of the wetted metal till it is strong enough to permit complete elimination of the steel parts formerly used. Nickel and its alloys are particularly suitable for this purpose. For economy in construction costs, use of such metal is limited to surfaces actually in contact with the mercury which is used as the heat transfer agent. Uniform composition in all parts of the boiling mass is insured by increasing the recirculation rate as compared with prior practice.

What is Claimed

Effecting heat transfer between a metal wall and a liquid in contact therewith, by continuously wetting the liquid side of the wall by circulation of the liquid at high upward velocity with decrease in velocity near the surface thereof.

* * *

High Vacuum Distillation. U. S. P. 1 847 625, March 1, 1932, application filed March 7, 1928; Edward G. Ragatz, assignor to Union Oil Co. of California.

IN THE vacuum steam distillation of lubricating oils, it is difficult to maintain a high vacuum because the vapor pressure of the condensate governs the degree of vacuum attainable, and the vapor pressure cannot be kept low, in the methods in prior use, without going to the expense of extreme chilling of the cooling water.

It has now been found that this difficulty can be overcome by condensing the steam at a relatively high temperature, at such a low pressure that the steam would not condense of itself; this is accomplished by scrubbing the steam with a solvent, such as a salt brine. Thus satisfactorily low pressures can be attained with such cooling water as is available, without resorting to artificial chilling.

What is Claimed

Steam distilling oil under high vacuum, condensing the oil vapors, scrubbing the steam with a solvent at a temperature and concentration to maintain the mixture at a vapor pressure lower than that of water at the same temperature and evaporating the water from the solvent mixture under the pressure of the steam distillation of the oil.

* * *

Hydrogenating Oils. U. S. P. 1 847-095, March 1, 1932, application filed March 11, 1927 and in Germany March 13, 1926; divided and this application filed Aug. 2, 1928; Alwin Mittasch, Rudolf Wietzel and Conrad Pfaundler, assignors to I. G. Farbenindustrie Aktiengesellschaft.

IN THE catalytic hydrogenation of heavy oils to form lighter oils such as gasoline, there is difficulty on account of deposition of coke and soot in the apparatus.

It has now been found that this trouble can be partly or wholly prevented by carrying out the reaction in presence of metalloids or their compounds, such as are capable of forming volatile hydrides. The metalloids, which may include boron, arsenic, antimony, bismuth, phosphorus, selenium or silicon, may be introduced into the system by coating inner surfaces of the apparatus with solutions of their compounds, e. g. boric acid, or by adding hydrides of the metalloids to the vapors being hydrogenated, or by alloying the metal of the apparatus with the desired metalloids.

What is Claimed

Preventing formation of carbon and soot, in high temperature treatment of hydrocarbons, by supplying other than as a catalyst or source of hydrogen a hydride of a metalloid from the group consisting of boron, arsenic, antimony, bismuth, phosphorus, selenium and silicon to the metal in contact with the heated hydrocarbons to prevent said undesirable formation of carbon and soot.

* * *

Fractionating Tower. U. S. P. 1 848-462, March 8, 1932, application filed Feb. 26, 1930; Claude M. Corbett, assignor of one-half to Ralph Moncrief.

THIS invention relates to an improved fractionating tower in which the capacity can be adjusted to the vaporizing capacity of the stills, so that better results are obtained with more flexible operation than hitherto; and in which the trays are arranged to facilitate removal of dirt, carbon deposits, etc.

For easy removal of solid impurities, the bubble trays are made with a sloping base, over which the liquid moves in a circular current which accelerates the settling of solids present in the liquid. The arrangement is such that carbon, dirt, etc. may be drained from the trays without interrupting the operation of the tower.

What Is Claimed

In a fractionating tower, a bubble tray with sloping base and raised vertical edges, a hole in the bottom of the base leading to a valve and thence by a pipe through the wall of the tower, a shaft attached to the valve stem and passing through a stuffing box in the tower wall, and a valve wheel on the shaft, so that liquid and sediment can be withdrawn from the tray and the tower while in operation.

* * *

Antiknock Compound, U. S. P. 1 - 844 362, Feb. 9, 1932, application filed June 15, 1927; Harry Karl Ihrig.

THE aromatic hydrocarbons which are extracted from certain crudes with liquid sulfur dioxide provide an excellent, cheap raw material for making a non-poisonous, non-metallic compound which is highly potent as an antiknock agent in gasoline.

The method of making an antiknock compound is to refine the sulfur dioxide extract, nitrate the refined product, and reduce the resulting nitro compounds to nitrogen bases, such as aromatic amines. The mixture of nitrogen derivatives of hydrocarbons, obtained by this process, may be purified if desired, but it is highly potent and can be used to good effect in gasoline without any purification treatment.

What Is Claimed

Extracting a hydrocarbon material with a polar solvent to form an extract containing the aromatic, hydroaromatic and unsaturated hydrocarbons, separating from this extract the unsaturated compounds, and treating the remainder to produce a mixture of aromatic amines.

* * *

Refining Cracked Gasolines. U. S. P. 1 846 803, Feb. 23, 1932, application filed March 3, 1926; Thos. T. Gray, assignor to Gray Processes Corp.

IN THE refining of cracked gasoline to remove gum-forming impurities, a prior process of the same inventor comprises vapor phase treatment with a solid adsorbent to polymerize the unsaturated compounds.

It has now been found that a still better effect in lowering the gum test can be obtained by a liquid phase treatment with certain metals or their oxides. Copper, copper oxide and zinc are especially suitable materials for this treatment; and the gum test of the product is materially lower than the gum test of cracked distillates after vapor phase treatment with fullers earth or a like adsorbent.

What is Claimed

Cracking oil, withdrawing the cracked product and treating it in liquid phase at a cracking temperature with a non-hydrogenating catalyst containing copper and favoring gum formation, then vaporizing the liquid and rectifying it to obtain gasoline.

DISTRIBUTION of lubricating oil, which, because of high pour point, is safe today and unsafe tomorrow, is looked upon with growing disfavor in the oil industry.

Most of the world's largest manufacturers of high quality lubricating oils, as well as the marketers of the world's finest oils, now maintain low pour point, throughout the year with

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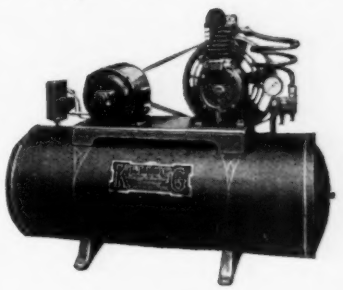

KELLOGG EM-3222-D
2-Stage
$234.00

Operating car lifts, inflating bus tires, or other work requiring high pressures is easy for this KELLOGG model.

Air first passes through the copper inter-cooler and is delivered into the high pressure cylinder at a low temperature, making this compressor outstanding in efficiency.

All the KELLOGG features are included: Patented constant level lubrication, pump and splash lubricating system . . eliminating oil from the air and adding years of life to the compressor, multiple V belt drive, steel welded mounting . . to give rugged strength and power, KELLOGG chrome Vanadium disc valves . . positive in action, increasing compressor efficiency 15 to 25%.

1½ horsepower motor
55 gal. tank
6.2 cubic ft. of air
175 pounds pressure
Completely equipped

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45 Humboldt St.
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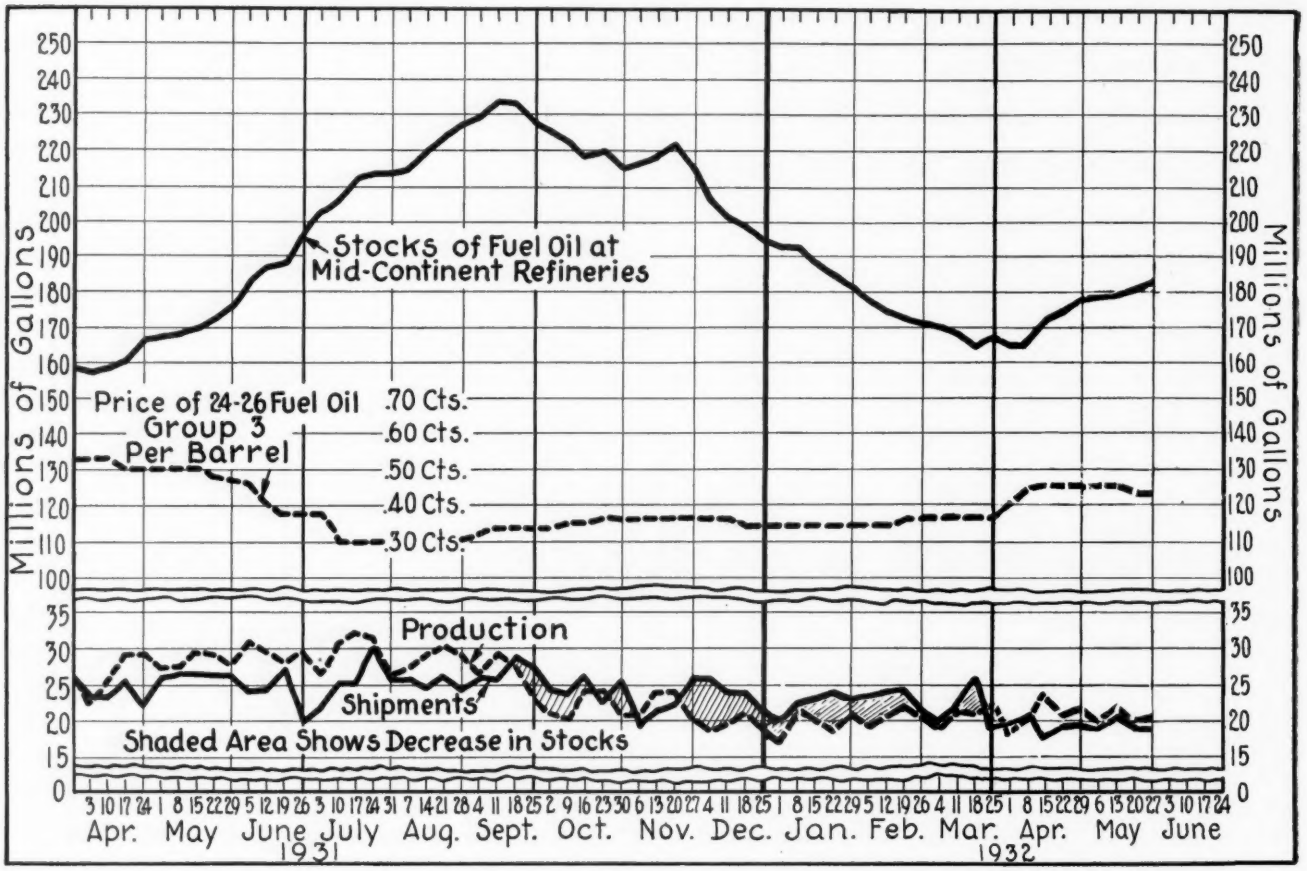
Barometer of Mid-Continent Refinery Market—Week Ending May 27

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 39 Plants to National Petroleum News



California Refinery Market

Bulk Inquiry Increases Slightly

LOS ANGELES, May 28.

PACIFIC coast petroleum markets were not altered materially the past week. A slight increase in inquiry for bulk California gasoline was reported and domestic quotations on gasoline were steady in the face of a disturbed retail situation.

With probably enough bulk gasoline already sold by local suppliers, either under contract or to affiliated companies, to ease the pressure on their storage facilities the tendency appears to be one of watchful waiting.

Nominal quotations on a 65 octane gasoline for shipment to the east coast were in the neighborhood of 4.75 cents. However, a spot sale might be consummated at 4.5 cents under favorable conditions, it was thought.

Local traders showed only slight interest in inquiries from Atlantic foreign ports seeking quotations on California gasoline for export. It was pointed out that a spot sale to these parts under the existing price structure at the Gulf could not net the Pacific coast refiner more than 3.75 cents a gallon, if that much.

Pacific foreign buyers continued to show interest in local market quotations. Under provisions of the state monopoly, recently adopted by Chile, inquiry was made for quotations on approximately 45,000 barrels of U. S. Motor gasoline a month for a period of six months.

With the buyer furnishing the drums, it was indicated likely quotations on this business would be in the neighborhood of 6.75 to 7 cents a gallon, f.o.b., San Pedro.

Buyers in South America, China, and Java made several purchases of fuel and diesel oils in amounts of 500 to 1000 tons. Inquiry and actual sale of kerosine and gasoline in cases was off.

Independent refiners were reported shading quotations for tank car and tank-truck-and-trailer lots of gasoline for movement within the state. The range was 7.75 to 8.5 cents generally with the commodity freely offered at 8 cents. These quotations include the state tax.

This softness in the local tank car market has had a disturbing influence on retail price structures. Several large resellers in the Los Angeles Basin have been advertising private and no-brand gasolines at 9.5 to 10 cents in competition with the major third-grade price of 11 cents and the regular white-grade price of 14 cents.

To combat this price cutting, Standard of California effective May 27 reduced the retail price on "Flight"—its third-grade product—to 10 cents. Other major marketers were expected to follow.

For movement out of the state quotations were practically unchanged at 4.75 to 5.5 cents, with spot demand slack. Retail conditions in the Pacific Northwest were improved during the week with an increase of about 2 cents in average tank wagon prices effective May 24.

Pennsylvania Markets

Prices Steady Despite Light Trading

CLEVELAND, May 31.—The last week in May was the quietest one so far this year for the western Pennsylvania refinery market. Trading was at low ebb but the market put up a stiff front. Neutral oil prices eased off slightly but prices of all other commodities were steady. No shading of prices to stimulate activity was reported from any part of the field.

The gasoline situation continued to be in good shape. While offerings were more plentiful, the market was devoid of distress offerings and U. S. Motor held at 6.5 to 6.75 cents.

Kerosine and fuel oil were steady; demand for the latter for cracking kept the market free of surplus.

A decided increase in inquiries for lubricating oils has been reported over the last two weeks but as yet a resumption of active buying has failed to materialize. Recent buying has been of small lots only, and with the better inquiry traders generally anticipate increased sales in the near future.

Akron Marketer Changes Name to Benzoco

AKRON, Ohio—Benzol-Cumberland Oil Co., local marketing company in Akron, has changed its name to Benzoco, Inc. The Benzol-Cumberland company was formed in 1929 from the former Benzol Motor Fuel Co. and the Cumberland Oil Co.

The company also has changed the brand name of its regular gasoline from Cumberland to Benzoco Jr. The company now markets an Ethyl gasoline; Benzoco Motor Fuel, at 3 cents a gallon more than the new Benzoco Jr.; and a third grade gasoline.

An advertising campaign in Akron newspapers has been started on Benzoco Jr., and banners are up at the service stations.

To Build Refinery at Saskatoon

TORONTO—A small refinery will be built at Saskatoon, Sask. by Hi-Way Refineries, Ltd. Property has been purchased. The company operates a small plant at Regina, Sask., where its headquarters are located. Crude for the Saskatoon plant will be imported from central and northwestern oil fields of the United States.

The company plans to erect several other plants at western Canadian points, according to reports.

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100% PURE PENNSYLVANIA

Bright Stock

SHARPLES PROCESSED

DISTILLED-BY-VACUUM

LOW CARBON CONTENT

COLOR *light and sharp*

High-speed centrifugals eliminate all impurities, and dewax completely.

Instantaneous distillation retains all the lubricating value, resulting in higher flash and fire test.

Triple filtration assures Bright Stock practically 100 per cent carbon-free.

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Cylinder Stocks Gasoline
Naphtha Cleaning Solvents
Kerosene Fuel Oil Paraffine
Waxes Petrolatum (All colors from snow-white to green)

IF IT'S A PETROLEUM PRODUCT WE HAVE IT

PENNSYLVANIA REFINING CO. BUTLER, PA.

Eastern Domestic Markets

Price Cutting Unsettles T. C. Markets

Staff Special
NEW YORK, May 28

GASOLINE markets along the Atlantic seaboard were under pressure during the week ended May 28. Tank car prices were slightly lower at New York harbor, while at other seaboard points prices generally were unchanged.

Tank wagon and service station markets in metropolitan New York passed into the second week of prices at 9.5 cents, excluding tax. Third-grade gasoline was introduced extensively in North Carolina and at certain points in New Jersey. The Boston retail market was rife with postings of 8 gallons for a dollar and third-grade gasoline was introduced by refiners more widely in the affected areas. In the Providence market gasoline was reduced 1 cent on May 25 to 12.5 cents tankwagon and 13.5 cents service station, including 2-cent state tax.

A few tank cars of gasoline were offered at 6.5 cents in the New York harbor market early in the week. This material represented only a small portion of the week's volume and was said to be gasoline purchased early in the month for resale. The majority of suppliers were asking 6.75 cents and reported a fair volume sold at that price. Jobber buying was along restricted lines. Most buyers were purchasing only enough to carry them over the Memorial Day rush.

The Baltimore and Philadelphia markets were saturated with gasoline purchased on short-time commitments. The prevailing price was reported at 6.75 cents. Buying was slow in Philadelphia, while the Baltimore market was a bit more active.

Spot business in the Boston market was transacted generally at 6.75 cents. There, also, jobber buying was as slow. The price in New England has been reported as being unsteady and that jobbers have been withholding sizeable purchases until a definite trend is established.

Bunker oil, grade C, was moving steadily at $0.75 per barrel at Boston, New York and Philadelphia. Diesel oil continued to be quoted at $1.50 per barrel.

Burning oil prices were generally unchanged at 5 cents for the top grade of furnace oil and 5.5 cents for kerosine.

Cargo markets were extremely dull throughout the week. Offerings of gasoline from both California and Gulf suppliers were on the basis of 5.5 to 5.75 cents delivered at seaboard terminals north of Hatteras. No spot transactions were reported. Foreign buyers showed no interest in American markets.

Wax Markets

Prices Unchanged

NEW YORK, May 28.—Little change was noted in New York and New Orleans wax markets during the week ended May 28. Buying interest was principally centered in the market for scale waxes. Prices generally were reported at 1.875 cents per pound for white scale in both markets. The quantities changing hands were relatively small.

The fully refined grades were not in demand. Foreign buyers showed little interest. Prices for all grades remained generally unchanged.

Akron Department Store Installs Station

AKRON, May 27.—A large Akron department store is entering the oil marketing business by installing a service station in its customers' automobile garage. Gasoline, motor oil draining, car washing, and lubrication services will be sold.

Advantages for the station in seeking business from the individual car owner are those of convenience of having the auto serviced while the customer is shopping, and of having these purchases placed on a charge account along with purchases of other merchandise from the store.

This station is in the garage of the M. O'Neil store, local representative of the May Co., department store chain. The garage has a storage capacity of 500 automobiles. Entrance and exits are on a side street, and the garage has a direct connection to the store.

The service station will be near the garage exit doors. Lubrication, car washing and motor oil draining facilities are along a side wall of the building. Gasoline pumps flank the drive by the doors.

Products handled are those of the Standard Oil Co. of Ohio, delivered by tank truck. The O'Neil store now has a bulk plant, and buys gasoline on the open market for its own delivery truck fleet.

A lift has been installed, and six gasoline meter pumps are to be placed next week. The station is expected to be open about June 13, and several employes are in training now at the Standard of Ohio lubrication school in Cleveland. The station will offer Standard Oil's point-by-point lubrication service.

Wins Royalty Suit

CHICAGO, May 28.—The Jenkins Petroleum Process Co., Chicago, was awarded a judgment in federal court at Milwaukee in amount of $150,067 against the Eason Oil Co., Enid, Okla. The suit was to force payment of royalties, which had been withheld by the Eason company, for the use of the Jenkins cracking process. The patents are owned by the Jenkins Petroleum Process Co.

Meets Price In Camden With 3rd Grade Gas

CAMDEN, N. J.—Standard Oil Co. of New Jersey is selling Acto, its green colored third grade gasoline, in some sections of Camden to meet local price competition.

A chain of automobile accessory stores near Camden and Philadelphia has been selling gasoline at low prices for about eight months as a trade puller for customers. Accessory store prices ranged from 9 to 11 cents a gallon, depending upon the wholesale market price.

Acto gasoline sells at 10 cents here. The New Jersey Standard's regular gasoline grade is unchanged in price. This is in line with the company's policy of leaving its price structure unchanged, and using the Acto grade to meet local price competition.

The Acto brand has not been extensively used by the New Jersey Standard. It was introduced in November 1931 at some stations in Maryland and New Jersey. Later price competition became severe in North Carolina, and Acto was placed on sale in that state in April.

Tells How to Fuel Motor Boats

NEW YORK—A poster designed to promote safety from fire in fueling motor boats and presenting safety rules for the guidance of boat operators and service stations in filling fuel tanks has been published by the Marine Committee of the National Fire Protection Association. Copies may be had from the National Fire Protection Association, 60 Batterymarch St., Boston, or the association's Marine Committee, 116 John St., New York.

NEW PATENTS

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

April 12, 1932

PRODUCTION

Apparatus for converting hydrocarbons—Louis G. Leffer, Kapellen-Wevelinghoven, Germany. Filed Nov. 1, 1928. No. 1,853,688.

Well-drilling equipment—William S. Gattrell, Lees Summit, Mo. Filed Oct. 1, 1928. No. 1,853,856.

Drill-pipe protector—William L. McLaine and Richard A. Sperry, Los Angeles, Calif., assignors of one-third to E. M. Smith Co., same place. Filed Sept. 20, 1929. No. 1,853,915.

MISCELLANEOUS

Petroleum liver fuel—James H. Shepard, Casper, Wyo., assignor to Standard Oil Co. of Indiana. Filed Mar. 3, 1930. No. 1,853,465.

Lubricating composition—Edward A. Nill, Detroit, Mich. Filed May 1, 1930. No. 1,853,571.

April 19, 1932

REFINING

Treatment of hydrocarbon oils—Jacque C. Morrell, Chicago, Ill., assignor to Universal Oil Products Co., same place. Filed Feb. 6, 1931. No. 1,854,417.

Treatment of hydrocarbon oil—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed July 30, 1927. No. 1,854,463.

Treating hydrocarbon oils—George W. Gray, New York, N. Y., assignor to Texas Co., same place. Filed Feb. 6, 1928. No. 1,854,835.

Process and apparatus for topping and cracking oils—George W. Gray, New York, N. Y. Filed May 14, 1929. No. 1,854,836.

Purifying petroleum oils—Benjamin L. Souther, Pittsburgh, and John W. Greene, Wilkinsburg, Pa., assignors to Gulf Refining Co., Pittsburgh. Filed Apr. 7, 1928. No. 1,854,866.

Art of cracking hydrocarbons—Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co., New York, N. Y. Filed Apr. 12, 1929. No. 1,854,937.

Device and method for treating oil-containing bottom settlings from oil wells — Martin L. Bond, Jr., Sand Springs, Okla. Filed Feb. 27, 1928. No. 1,855,042.

Process for cracking oil—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Oct. 6, 1920. No. 1,855,167.

PRODUCTION

Deep-well pump—Herbert W. Bradshaw, Huntington Park, Calif. Filed July 26, 1930. No. 1,854,175.

Inclination-indicating device for oil wells—Theodore L. Lynch, Huntington Park, and Harry L. Rilling, Long Beach, Calif. Filed Nov. 1, 1929. No. 1,854,208.

Well-point attachment—Thomas F. Moore, Morris Plains, N. J. Filed June 28, 1930. No. 1,854,344.

Drill and underreamer—George F. Dillon, Wichita, Kans. Filed May 24, 1930. No. 1,854,369.

Well-screen—Ollyn A. Layne, Los Angeles, Calif. Filed July 11, 1928. No. 1,854,517.

Cement-barrel—John Q. Little, Whittier, Calif. Filed May 28, 1930. No. 1,854,518.

Pipe-holder for well-pipes — V. Askew, Del Rio, Tex. Filed June 29, 1931. No. 1,854,573.

Rock-drilling bit—Alfred F. Powell, Long Beach, Calif. Filed June 6, 1928. No. 1,854,623.

Well-drilling bit—Alfred F. Powell, Long Beach, Calif. Filed Apr. 7, 1930. No. 1,854,624.

Earth-boring drill—Floyd L. Scott, Houston, Tex., assignor to Hughes Tool Co., same place. Filed Mar. 12, 1929. No. 1,854,911.

Core-drill — Louis H. Wellensiek, Houston, Tex., assignor to Hughes Tool Co., same place. Filed Sept. 19, 1929. No. 1,854,914.

MISCELLANEOUS

Lubricant—Charles P. Teeple, Chicago, Ill., assignor to Crane Packing Co., same place. Filed Oct. 29, 1930. No. 1,854,237.

Floating roof for liquid storage-tanks—John H. Wiggins, Tulsa, Okla. Filed Mar. 17, 1930. No. 1,854,534.

Floating roof for liquid storage-tanks John H. Wiggins, Tulsa, Okla. Filed Apr. 11, 1930. No. 1,854,535.

April 26, 1932

REFINING

Treatment of hydrocarbon oils — Jacque C. Morrell and Gustav Egloff, Chicago, Ill., assignors to Universal Oil Products Co., same place. Filed Jan. 29, 1931. No. 1,855,486.

Apparatus for distilling oils—Henry H. Moreton, Santa Monica, Calif. Filed Oct. 8, 1928. No. 1,855,685.

Process of treating sludge acid—Earl B. Conklin, Syracuse, N. Y., assignor to Semet-Solvay Co., New York, N. Y. Filed Aug. 20, 1928. No. 1,855,878.

Process of cracking oil—Gustav Egloff, Chicago, Ill., assignor to Universal Oil Products Co., same place. Filed Dec. 31, 1930. No. 1,855,879.

PRODUCTION

Drilling - cable - protecting means. — William H. Cater, Chicago, Ill. Filed Oct. 16, 1929. No. 1,855,337.

Outside pipe-cutter. — Walter L. Church, Houston, Tex. Filed Feb. 11, 1930. No. 1,855,338.

Casing-head—Granville A. Humason, Houston, Tex. Filed Dec. 11, 1928. No. 1,855,350.

Casing and tubing support—Lory J. Mildren, Ponca City, Okla., assignor to Hinderliter Tool Co., Tulsa, Okla. Filed Jan. 28, 1930. No. 1,855,483.

Torpedo-shell—Albert G. Stoops, Tulsa, Okla. Filed Jan. 20, 1930. No. 1,855,495.

Pump—James S. Taylor and James C. Smith, Tulsa, Okla., assignors of one-half to Iverson Tool Co., same place. Filed Nov. 13, 1930. No. 1,855,498.

Torsion and coupling controlling device—Gustavus A. Montgomery, Dallas, Tex. Filed July 9, 1927. No. 1,855,556.

Automatic cathead — Benjamin F. Kelley, Tulsa, Okla. Filed June 12, 1930. No. 1,855,801.

Jar-up rope-knife — Charles E. Gallman, Jack Harshaw, and Frank S. Haire, Tulsa, Okla., assignors to Oil Well Supply Co., Pittsburgh, Pa. Filed Aug. 2, 1929. No. 1,855,853.

Sand-testing tool for wells — Frank Hux, Bruni, Tex., assignor to Standard Drilling & Sand Testing Co., Webb county, Tex. Filed Dec. 5, 1930. No. 1,855,914.

MISCELLANEOUS

Lubricating oil — Jack Robinson, Wood River, Ill., assignor to Standard Oil Co., of Indiana. Filed June 30, 1927. No. 1,855,203.

Apparatus for testing dispensing apparatus — Harry G. Weymouth, Pittsburgh, Pa., assignor to Pittsburgh Equitable Meter Co., same place. Filed Nov. 19, 1928. No. 1,855,502.

As simple as adding cream to your coffee!

Just add DYKEM COLOR to the storage tank at the time it is being filled with gasoline.

DYKEM COLORS are liquid and instantly blend with, and become an inseparable part of, the gasoline . . . therefore cannot "settle out." Gasoline colored with DYKEM COLORS stays colored!

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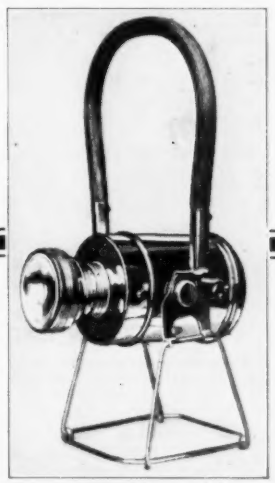

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Write for further details

E. B. BRONSON & CO.
Blue Island, Illinois

Complete Seaboard Markets

Eastern Domestic Markets

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in Florida and South Carolina.)

	Prices May 31	Prices May 23	Prices May 16
U. S. MOTOR GASOLINE:			
Below 65 Octane Number			
New York harbor	6.50 – 6.75	6.75	6.75
Boston	6.75 – 7.00	6.75 – 7.00	7.00 – 7.25
Providence	6.75 – 7.00	6.75 – 7.00	7.00 – 7.25
Philadelphia district	6.75	6.75	6.75
Baltimore district	6.75	6.75	6.75
Norfolk district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Charleston district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Savannah district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Jacksonville district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
MOTOR GASOLINE:			
65 Octane Number and Above			
New York harbor	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Portland district	7.00 – 7.25	7.00 – 7.25	7.25 – 7.50
Boston district	7.00 – 7.25	7.00 – 7.25	7.25 – 7.50
Providence district	7.00 – 7.25	7.00 – 7.25	7.25 – 7.50
Philadelphia district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Baltimore district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Norfolk district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Charleston district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Savannah district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Jacksonville district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
AVIATION GASOLINE:			
Below 73 Octane Number			
New York harbor	9.00 –10.00	9.00 –10.00	9.00 –10.00
Philadelphia	9.00 –10.00	9.00 –10.00	9.00 –10.00
Baltimore	9.00 –10.00	9.00 –10.00	9.00 –10.00
Boston	9.00 –10.00	9.00 –10.00	9.00 –10.00
73 Octane Number and Above (Octane determination basis 300° .. 600 R.P.M.)			
New York harbor	11.00 –12.00	11.00 –12.00	11.00 –12.00
Philadelphia	11.00 –12.00	11.00 –12.00	11.00 –12.00
Baltimore	11.00 –12.00	11.00 –12.00	11.00 –12.00
Boston	11.00 –12.00	11.00 –12.00	11.00 –12.00
WATER WHITE KEROSINE			
New York harbor	5.50	5.50	5.50
Philadelphia district	5.50	5.50	5.50
Baltimore district	5.50	5.50	5.50
Boston district	5.75	5.75	5.75
BURNING OILS:			
New York harbor:			
Furnace oil No. 1	5.00	5.00	5.00
Heating oil No. 2	4.00	4.00	4.00
Distillate oil No. 3	4.00	4.00	4.00
Industrial oil No. 4	3.50	3.50	3.50
Philadelphia District:			
Furnace oil No. 1	5.00	5.00	5.00
Heating oil No. 2	4.00	4.00	4.00
Distillate oil No. 3	4.00	4.00	4.00
Boston district:			
Furnace oil No. 1	5.00	5.00	5.00
Heating oil No. 2	4.25	4.25	4.25
Distillate oil No. 3	4.00	4.00	4.00
Industrial oil No. 4	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$0.75	$0.75	$0.75
Philadelphia district	$0.75	$0.75	$0.75
Boston district	$0.75	$0.75	$0.75
DIESEL OIL			
New York harbor	$1.50	$1.50	$1.50
GAS OIL: 28-34 Gravity			
New York harbor	3.75	3.75	3.75
Philadelphia district	3.75	3.75	3.75

New York Export Market

(Lubricating oils in cents per gal. in bbls. F.a.s. New York, except where otherwise noted. Paraffin oil prices represent bulk shipment in tankers f.a.s. New York.)

	May 31	May 23	May 16
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	31.00 –32.00	31.00 –32.00	31.00 –32.00
Bright stock, No. 6½ color diluted	30.00 –31.00	30.00 –31.00	30.00 –31.00
600 D filtered	26.00 –28.00	26.00 –28.00	25.00 –26.00
600 Warren E filtered	23.00 –24.00	23.00 –24.00	23.00 –24.00
600 stm. refd. unfiltered	20.50 –21.00	20.00 –21.00	20.50 –21.00
650 stm. refd. unfiltered	22.50 –23.00	22.50 –23.00	22.50 –23.00
600 flash steam refined	23.50 –24.00	23.00 –24.00	23.50 –24.00
630 flash, steam refined	28.50 –29.50	28.00 –29.50	28.00 –29.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	9.50	9.50	9.50
250 vis. No. 6 color	9.00	9.00	9.00
200 vis. No. 6 color	8.25	8.25	8.25
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	10.00	10.00	10.00
180 vis. No. 3¼ color	9.50	9.50	9.50
100 vis. No. 2¼ color	5.00	5.00	5.00

Wax Market

(Prices in cents per pound, f. a. s. carload lots. Tests made by A. S. T. M. method with melting points converted into A. M. P. by adding 3° F.)

NEW YORK	May 31	May 23	May 16
124-126 Yellow crude scale	1.80	1.80	1.875
122-124 White crude scale	1.875	1.875	1.875– 2.00
124-126 White crude scale	1.875	1.875	1.875– 2.00
123-125 Fully refined	3.00	3.00	3.00
125-127 Fully refined	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
128-130 Fully refined	3.25	3.25	3.25
130-132 Fully refined	3.375	3.375	3.375
133-135 Fully refined	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
135-137 Fully refined	4.25	4.25	4.25

NEW ORLEANS	May 31	May 23	May 16
124-126 Yellow crude scale	1.80	1.80	1.875
122-124 White crude scale	1.875	1.875	1.875– 2.00
124-126 White crude scale	1.875	1.875	1.875– 2.00
123-125 Fully refined	3.00	3.00	3.00
125-127 Fully refined	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
128-130 Fully refined	3.125– 3.25	3.125– 3.25	3.125– 3.25
130-132 Fully refined	3.375	3.375	3.375
133-135 Fully refined	4.125– 4.25	4.125– 4.25	4.125– 4.25

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions except prices covering bulk shipments of 20,000 barrels or more, specified to the contrary, unless otherwise noted.)

	Prices May 31	Prices May 23	Prices May 16
For Domestic Shipment			
U. S. MOTOR GASOLINE:			
Below 65 octane number	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
65 octane number and above	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
KEROSINE			
41-43 w.w.	4.50	4.50	4.50
For Export Shipment			
GASOLINE			
U. S. Motor gasoline	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
60-62, 400 e.p. gasoline	4.00 – 4.50	4.00 – 4.50	4.00 – 4.50
61-63, 390 e.p. gasoline	4.00 – 4.75	4.00 – 4.75	4.00 – 4.75
64-66, 375 e.p. gasoline	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00
U. S. Motor, (cases cargoes)	$1.50	$1.50	$1.50
64-66, cases (cargoes)	$1.60	$1.60	$1.60
KEROSINE			
41-43 water white	4.50	4.50	4.50
41-43 prime white	4.25	4.25	4.25
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
(For Domestic and/or Export Shipment)			
GAS and BUNKER OILS			
*26-30 translucent gas oil	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
*30 plus translucent gas oil	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
Grade C bunker oil, for ships' bunkers, per bbl.	$0.60	$0.60	$0.60
Grade C bunker oil, per bbl. in cargoes	$0.50 –$0.53	$0.50 –$0.53	$0.50 –$0.53

*Less than ½ of 1% sulphur. †Nominal.

MEXICAN CRUDE AND BUNKER OILS (f.o.b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.48 –$0.50	$0.48 –$0.50	$0.48 –$0.50
Grade C bunker oil for bunkering, taxes paid, per bbl.	$0.65	$0.65	$0.65
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100 F. cold test 0 Tanker, f. o. b. Gulf oil terminals.)			
200 vis. No. 3 unfiltered pale	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
300 vis. No. 3 unfiltered pale	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
500 vis. No. 3½ unfiltered pale	6.75 – 7.50	6.75 – 7.50	6.75 – 7.50
750 vis. No. 4 unfiltered pale	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00
1200 vis. No. 4 unfiltered pale	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
200 vis. No. 5-6 red oil	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
300 vis. No. 5-6 red oil	5.75 – 6.00	5.75 – 6.00	5.75 – 6.00
500 vis. No. 5-6 red oil	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
750 vis. No. 5-6 red oil	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
1200 vis. No. 5-6 red oil	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	May 31	May 23	May 16
Gasoline, U. S. Motor, 53-55 Gravity	4.00 – 4.50	4.00 – 4.50	3.50 – 4.00
Gasoline, 400 e.p. blend 65 Octane No. and above	4.50 – 5.00	4.50 – 5.00	4.25 – 5.00
Gas oil, 30-34 per bbl.	$0.78 –$0.95	$0.78 –$0.95	$0.80 –$0.95
Diesel oil, 27 plus, per bbl.	$0.78 –$0.90	$0.78 –$0.90	$0.80 –$0.90
Bunker oil, 14-18 per bbl.	$0.56 –$0.70	$0.56 –$0.70	$0.56 –$0.70
Fuel oil, 14-18 per bbl.	$0.52 –$0.70	$0.52 –$0.70	$0.52 –$0.70
Kerosine, 38-40 w.w., 125-150 flash, per gal.	3.75 – 4.75	3.75 – 4.75	3.75 – 4.75
Cased Goods			
Gasoline, U. S. Motor	$1.35 –$1.50	$1.35 –$1.50	$1.35 –$1.50
Gasoline, 400 e.p. blend	$1.45 –$1.65	$1.45 –$1.65	$1.45 –$1.65
Kerosine, 38-40 w.w., 125-150 flash	$1.20 –$1.35	$1.20 –$1.35	$1.20 –$1.35
Kerosine, prime white	$1.00 –$1.15	$1.00 –$1.15	$1.00 –$1.15

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling) to U. S. ports, cents per barrel

	May 31			
	Crude &/or Fuel		Refined Oil &/or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Calif.-U.K./Continent*	12/6	15/-20/	17/6	17/-18/
Gulf-U.K./Continent*	8/6	8/6-10/	8/6	9/-10/
Calif.-N. Atlantic (not E. of N. Y.)	30c	40-45c	40c	40-45c
Gulf-N. Atlantic** (not E. of N. Y.)	14c	15–16c	14c	16–18c

*Continental ports in range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate; Tampico, 2 to 3c per bbl. additional.

New Car-Record Device For Automobiles

KANSAS CITY, May 28.—A small, unobtrusive attachment, called Car-Record, to be fastened permanently to the automobile dashboard, is offered oil companies by the Car-Record Co., Kansas City, to act as a record of lubrication and a guide to future service.

It has been designed to show the customer definitely when his car must be lubricated again, and offers the possibility of making for the oil company permanent and complete customers out of occasional ones, since it is designed to bring them back to the same company's stations.

The face of Car-Record, which stands up over the dashboard, has a glass top, framed in nickel-plated steel. Under the glass is printed the oil company name, its slogan or trademark. There is a slot attachment, four inches long and two and one-half inches wide, which holds the card giving the lubrication record. This card slides readily into the slot and the slot goes under the instrument board, out of the way.

The card has space for the speedometer reading at the time of service and when service is again due; space for checking units that were serviced, for the name and address of company, make of car, and similar necessary information.

Panhandle Refg. Changes Colors of Gasoline

WICHITA FALLS.—The Panhandle Refining Co. on May 16 changed its color scheme for gasolines.

The company's third grade gasoline hereafter will not be colored. The regular grade, brand name "Noxless," will be green. A premium gasoline to be offered early in June will be red.

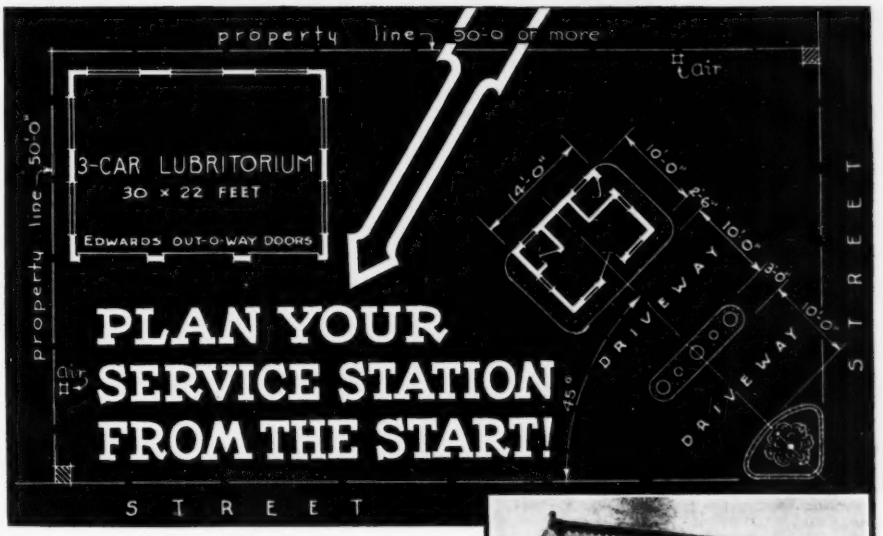
The new premium motor fuel will be branded "Octagne." It will have an octane rating of 75, according to Roy B. Jones, president. The "Noxless" grade has a 65 octane rating. The third grade has a 53 octane rating.

Mr. Jones said the change in coloring was to prevent "substitution."

Stockham, Not Stockholm

On page 79 of the May 18, 1932 issue of NATIONAL PETROLEUM NEWS, the name of the Stockham Pipe & Fittings Co., Birmingham, was reported erroneously as the Stockholm Pipe & Fittings Co. The Stockham company makes header box assemblies to meet all conditions encountered in refinery cracking stills, tube stills and condenser coils.

Let EDWARDS



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OFTEN the success or failure of the new service station hinges on the angle of the drive, the distance from the street, the placing of pumps, etc.

Edwards buildings and lot layouts are the result of thirty years scientific study . . . each one is planned right from the start to pay profits. Edwards Buildings are models of efficiency, beauty, with refinements that make future expansion economical and simple. The English model and three car lubritorium shown here is but an example of the many Edwards Buildings available for prompt delivery. Edwards Filling Stations, Lubritoriums, Parking Lot Offices, etc., are easy to erect, economical to buy and profitable to operate. Leaders in the industry have standardized on them for their sound practical values.

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Get our proposition. Send lot dimensions and frontage.

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MR. REFINER

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you are reading this issue of National Petroleum News, hold in your mind a mental photograph of the hundreds of customers and prospects for your output who, at this same moment, are reading this paper.

Is there a sales-message for them from you in the advertising pages?

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect May 30, 1932, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

Standard Gasoline	T.W.	Tax	Total T.W.	S.S.	Kerosine T.W.
Atlantic City, N. J.	13.4	3	16.4	16.9	11.2
Newark, N. J.	12.7	3	15.7	16.2	8.5
Annapolis, Md.	13	4	17	17.5	10
Baltimore, Md.	12.4	4	16.4	16.9	7
Cumberland, Md.	13.9	4	17.9	18.4	11.7
Washington, D. C.	12.9	2	14.9	15.4	10
Danville, Va.	14.1	5	19.1	19.6	11.9
Norfolk, Va.	12.5	5	17.5	18	10.3
Petersburg, Va.	13.6	5	18.6	19.1	11.4
Richmond, Va.	12.9	5	17.9	18.4	10.7
Roanoke, Va.	14.1	5	19.1	19.6	11.9
Charleston, W. Va.	13.8	4	17.8	18.3	11.6
Parkersburg, W. Va.	12.4	4	16.4	16.9	10.2
Wheeling, W. Va.	13.4	4	17.4	17.9	11.2
Charlotte, N. C.	14.7	6	20.7	21.2	12.5
Hickory, N. C.	14.9	6	20.9	21.4	12.7
Mt. Airy, N. C.	15	6	21	22.5	12.8
Raleigh, N. C.	14.5	6	20.5	21	12.3
Salisbury, N. C.	14.8	6	20.8	21.3	12.6
Charleston, S. C.	12.5	6	18.5	19	10.3
Columbia, S. C.	14.4	6	20.4	20.9	12.2
Spartanburg, S. C.	14.7	6	20.7	21.2	12.5

Dealer Discount: gasoline, 2½c off retail t.w. price, except Maryland, New Jersey and Washington, D. C. where discount is 3½c.

Kerosine Discount: 1c off t.w. price for 25 gals. or more, under contract, thru territory except New Jersey, effective June 17, 1931.

S. O. NEW YORK

Socony Gasoline

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	9.5	3	12.5	12.5	9.5
Borough of Richmond	9.7	3	12.7	12.7	9.5
Albany, N. Y.	13	3	16	17	10
Buffalo, N. Y.	13.5	3	16.5	17.5	9
Rochester, N. Y.	13.5	3	16.5	17.5	9
Syracuse, N. Y.	13.5	3	16.5	17.5	9.5
Boston, Mass.	12.5	3	15.5	16.5	9
Augusta, Me.	13.8	4	17.8	18.8	9.5
Manchester, N. H.	13.4	4	17.4	19.4	9
Burlington, Vt.	14.3	4	18.3	19.3	9.5
New Haven, Conn.	13.6	2	15.6	16.6	9
Providence, R. I.	12.5	2	14.5	15.5	9

Dealer discount: on gasoline 2c off posted t.w. price, except 3c in New York City.

ATLANTIC REFINING

Atlantic White Flash Gasoline

Pittsburgh, Pa.	13	3	16	17	11
Philadelphia, Pa.	12	3	15	16	11
Allentown, Pa.	13	3	16	17	11
Erie, Pa.	13	3	16	17	11
Scranton, Pa.	13	3	16	17	11
Altoona, Pa.	13	3	16	17	11
Dover, Del.	13	3	16	17	11
Wilmington, Del.	13	3	16	17	11
Boston, Mass.	12.5	3	15.5	16.5	9
Springfield, Mass.	13.5	3	16.5	17.5	9
Worcester, Mass.	13.3	3	16.3	17.3	9
Fall River, Mass.	10.3	3	13.3	14.3	8
Providence, R. I.	12.5	2	14.5	15.5	9
Hartford, Conn.	13.5	2	15.5	16.5	9
New Haven, Conn.	13.6	2	15.6	16.6	9
Atlantic City, N. J.	13.4	3	16.4	16.9	11.2
Camden, N. J.	12.8	3	15.8	16.3	10.6
Trenton, N. J.	13.2	3	16.2	16.7	11
Annapolis, Md.	13	4	17	17.5	10
Baltimore, Md.	12.4	4	16.4	16.9	7
Hagerstown, Md.	12	4	16	16	10.4
Richmond, Va.	12.9	5	17.9	18.4	10.7
Wilmington N. C.	12.6	6	18.6	19.1	10.4
Brunswick, Ga.	13	6	19	20	*14.5
Jacksonville, Fla.	11	7	18	19	10.5

Dealer discount: on gasoline, "split dealers," 2c off posted t.w. price; to 100% dealers, 2.5c; to authorized dealers (under lease 1c per gal.), 2.5c off posted s.s. price. Commercial accounts, under contract for one year, are sold at a discount off the posted prices, with due consideration to competition.

*Georgia kerosine prices include 1c state tax.

Latest Changes in Tank Wagon Prices

Gasoline

Atlantic Refining—T.w. cut 1.6c, s.s. cut 2.1c, Hagerstown, both to 16c, including 4c tax, **May 2.**

T.w. and s.s. cut 2c, Brunswick, to 19c and 20c, including 6c tax, **May 17.**

S. O. Ohio—X-70 t.w. and s.s. up 1c through Richland county both to 17c; Renown Green s.s. up 1c, to 15c, including 4c tax, **May 26.**

T.w. cut 1.5c, s.s. cut 2c, through Defiance, Fulton, Hamilton, Licking, Lucas, Medina, Ottawa, Pickaway, Portage, Sandusky, Stark, Summit, Wayne, Williams, and Wood counties, all to 16c, including 4c tax, noon, **May 27.**

S. O. Kentucky—Crown and Kyso Green gasolines cut ½c to 1.5c through territory, **May 28.** Prices in this table do not reflect this change since details were not available at time of going to press.

Kyso Green t.w. and s.s. cut 2c, Birmingham, both to 16.5c; Crown t.w. and s.s. cut 1.5c, both to 20c, including 6c tax, **May 20.**

Kyso Green t.w. and s.s. cut 1c, Tampa, both to 18c, including 7c tax, **May 5.**

S. O. Indiana — "Stanolind Blue" gasoline changed to "Stanolind" gasoline, **May 28.** Blue color has been eliminated and gasoline will be uncolored from now on.

Stanolind t.w. and s.s. cut 1c, Chicago, both to 12.5c, including 3c tax, **May 28.**

Stanolind s.s. only cut ½c, Minneapolis, to 12.5c, including 3c tax, **May 25.**

Stanolind s.s. only cut 1.6c, Fargo, to 15c, including 3c tax, **May 21.**

S. O. California—S.s. only up 1.5c, Portland, to 16.5c, including 4c tax, Seattle and Tacoma to 17.5c, including 5c tax; up 1c, Spokane, to 21c, including 5c tax, **May 24.**

Kerosine

Atlantic Refining—T.w. cut 1c, Fall River, to 8c, **May 23.**

T.w. cut 3/10c, Hagerstown, to 10.4c, **May 2.**

S. O. Kentucky—T.w. cut 2c, Birmingham, to 11c, **May 18;** up 2c, Jacksonville, to 12.5c, **May 16.**

S. O. Louisiana—T.w. cut 2c, Baton Rouge, to 10c, **May 18.**

S. O. OHIO

Sohio X-70	T.W.	Tax	Total T.W.	S.S.	Kerosine T.W.
Ohio statewide	13.5	4	17.5	18	12.5
Defiance, Franklin, Fulton, Hamilton, Licking, Lucas, Medina, Montgomery, Ottawa, Pickaway, Portage, Sandusky, Stark, Summit, Wayne, Williams and Wood counties	12	4	16	16	12.5
Butler, Hancock, Lorain and Richland counties:	13	4	17	17	12.5

Renown Green (Third Grade)

Ohio statewide				16	12.5
Defiance, Franklin, Fulton, Hamilton, Licking, Lucas, Medina, Montgomery, Ottawa, Pickaway, Portage, Sandusky, Stark, Summit, Wayne, Williams, and Wood counties:				14	12.5
Butler, Hancock, Lorain, and Richland counties				15	12.5

Dealer and commercial consumer discount: Sohio X-70 gasoline, 2c off t.w. price; Renown Green, 1.5c off s.s. price (sold to commercial consumers beginning March 7). Kerosine, 2.5c off t.w. in counties where prices are below statewide level, discount on Sohio X-70 gasoline is generally 2.5c.

S. O. KENTUCKY

Crown Gasoline

Lexington, Ky.	13.5	5	18.5	19.5	10.5
Louisville, Ky.	12.5	5	17.5	18.5	10.5
Paducah, Ky.	13.5	5	18.5	19.5	8.5
Covington, Ky.	13.5	5	18.5	19.5	10.5
Jackson, Miss.	14	5.5	19.5	19.5	11.5
Vicksburg, Miss.	13.5	5.5	19	19	9.5
Birmingham, Ala.	14	*6	20	20	11
Mobile, Ala.	14.5	*7.5	22	22	10
Montgomery, Ala.	16	*7	23	23	14.5
Macon, Ga.	16	6	22	22	*13
Atlanta, Ga.	16	6	22	22	*11
Augusta, Ga.	16	6	22	22	*14.5
Savannah, Ga.	16	6	22	22	*13.5
Jacksonville, Fla.	12	7	19	19	12.5
Miami, Fla.	15	7	22	22	13.5
Tampa, Fla.	14	7	21	21	9.5
Pensacola, Fla.	12	*8	20	20	13.5

Kyso Green (Third Grade)

Lexington, Ky.	11.5	5	16.5	16.5	10.5
Louisville, Ky.	10.5	5	15.5	15.5	10.5
Paducah, Ky.	11.5	5	16.5	16.5	8.5
Jackson, Miss.	10.75	5.5	16.25	16.25	11.5
Vicksburg, Miss.	10.25	5.5	15.75	15.75	9.5
Birmingham, Ala.	10.5	*6	16.5	16.5	11
Mobile, Ala.	12.5	*7.5	20	20	10
Montgomery, Ala.	13	*7	20	20	14.5
Atlanta, Ga.	11	6	17	17	*11
Augusta, Ga.	14	6	20	20	*14.5
Macon, Ga.	13	6	19	19	*13
Jacksonville, Fla.	10	7	17	17	12.5
Miami, Fla.	13	7	20	20	13.5
Pensacola, Fla.	11	7	18	18	13.5
Tampa, Fla.	11	7	18	18	9.5

Dealer discount: on Crown, and Crown Ethyl gasolines, 3c off t.w. price thru territory, except Kentucky 2c: Kyso Green discount is 2c thru territory.

Discount off t.w. price Kerosene at Atlanta 3c.

***Taxes:** in the state gasoline taxes at following points are included these city and county taxes: Birmingham, 1c city; Mobile, 1c city and 1.5c county; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia kerosine prices include 1c state tax. Montgomery kerosine price includes ½c city tax.

S. O. INDIANA

Standard Red Crown Gasoline

Chicago, Ill.	13	3	16	16	10
Decatur, Ill.	13.5	3	16.5	16.5	10.1
E. St. Louis, Ill.	12.8	3	15.8	15.8	9.3
Joliet, Ill.	13.5	3	16.5	16.5	10.1
Peoria, Ill.	13.5	3	16.5	16.5	10.1
Quincy, Ill.	13.3	3	16.3	16.3	9.9
Springfield, Ill.	13.5	3	16.5	16.5	10.1
Indianapolis, Ind.	13.3	4	17.3	17.3	10.1
Evansville, Ind.	13.3	4	17.3	17.3	10.1
South Bend, Ind.	13.8	4	17.8	17.8	10.6
Detroit, Mich.	9.5	3	12.5	12.5	10.8
Grand Rapids, Mich.	13.6	3	16.6	16.6	10.5
Saginaw, Mich.	12.5	3	15.5	15.5	10.8
Marquette, Mich.	14	3	17	17	10.9
Green Bay, Wisc.	13.7	4	17.7	17.7	10.5

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 2/25c; Nebraska, 3/50c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1.5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fees only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3.5c for next 3; 2/5c for next 5; 3/10c for next 15; and 1.5c per gal. in lots over 25 bbls.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect May 30, 1932, as Posted by Principal Marketing Companies

S. O. INDIANA (*Cont'd*)

	T.W.	Tax	Total T.W.	S.S.	T.W.
Madison, Wisc.	13.4	4	17.4	17.4	10.2
Milwaukee, Wisc.	13.2	4	17.2	17.2	10
La Crosse, Wisc.	14.3	4	18.3	18.3	11.1
Minneapolis, Minn.	14.3	3	17.3	17.3	11
Duluth, Minn.	14.6	3	17.6	17.6	11
Mankato, Minn.	14.2	3	17.2	17.2	10.8
Des Moines, Ia.	13.6	3	16.6	16.6	10.4
Davenport, Ia.	13.6	3	16.6	16.6	10.4
Sioux City, Ia.	13.2	3	16.2	16.2	10
Mason City, Ia.	13.6	3	16.6	15.7	10.4
St. Louis, Mo.	12.5	†3	15.5	15.5	9.4
Kansas City, Mo.	13	†3	16	16	8.7
St. Joseph, Mo.	12.6	†3	15.6	15.6	9.2
Fargo, N. D.	16	3	19	19	13
Grand Forks, N. D.	16.3	3	19.3	19.3	13.3
Minot, N. D.	16	3	19	19	13
Pierre, S. D.	14.1	4	18.1	18.1	11.5
Huron, S. D.	14.4	4	18.4	18.4	11.8
Wichita, Kans.	11.9	3	14.9	14.9	8.9
Bartlesville, Okla.	10.1	4	14.1	17	8.1

†Includes city tax of 1c.

Stanolind Gasoline

Stanolind prices are 1.5c per gal. under Standard Red Crown, except at following points:

Chicago, Ill.	9.5	3	12.5	12.5	10
E. St. Louis, Ill.	11.3	3	14.3	11	9.3
Joliet, Ill.	10.5	3	13.5	13.5	10.1
Kansas City, Mo.	10	3	13	13	8.7
St. Joseph, Mo.	8	†3	11	11	9.2
St. Louis, Mo.	8.5	†3	11.5	11.5	9.4
Detroit, Mich.	8.5	3	11.5	11.5	10.8
Grand Rapids, Mich.	11.6	3	14.6	14.6	10.5
Saginaw, Mich.	10.5	3	13.5	13.5	10.8
Bartlesville, Okla.	8.6	4	12.6	14.1	8.1
Mankato, Minn.	12.7	3	15.7	13.5	10.8
Minneapolis, Minn.	10	3	13	12.5	11
Evansville, Ind.	11.8	4	15.8	15	10.1
Davenport, Ia.	12.1	3	15.1	11.9	10.4
Des Moines, Ia.	8.9	3	11.9	11.9	10.4
Mason City, Ia.	12.1	3	15.1	13.5	10.4
Sioux City, Ia.	9.9	3	12.9	12.9	10
Green Bay, Wisc.	13.2	3	16.2	13.5	10.5
La Crosse, Wisc.	12.3	4	16.3	16.3	11.1
Madison, Wisc.	11.9	4	15.9	15.3	10.2
Milwaukee, Wisc.	8.5	4	12.5	12.5	10
Huron, S. D.	10	4	14	15	11.8
Fargo, N. D.	14.5	3	17.5	15	13

†Includes city tax of 1c.

Q.D.A. (Effective May 4, 1931):

Discounts to resellers, except in Chicago, all quantities per month:

Off s.s. under 75,000 gals.: Ethyl: 3c, Red Crown 2.5c, Stanolind 1.5c. Off t.w. over 75,000 gals.: Ethyl 4c, Red Crown, 3.5c, Stanolind 2c. (See also last paragraph below).

Chicago reseller discounts: any quantity, Ethyl 4c, "regular" 3.5c, third grade 2c, by principal marketers. Discounts are off s.s. below 75,000 gals., and off t.w. above 75,000 gals.

Consumer discounts, off t.w., outside Chicago: 500 to 75,000 gals., Ethyl 3c, Red Crown 2.5c, Stanolind 1.5c. Over 75,000 gals., Ethyl 4c, Red Crown 3.5c, Stanolind 2c.

Chicago consumer discounts, off t.w.: over 500 gals., Ethyl 4c, regular 3.5c, third grade 2c.

Effective Nov. 4, 1931, to all buyers from t.w., 25 gals. and over, all gasolines, 1c off t.w. price. No change in total discount to contract customers.

S. O. NEBRASKA

Red Crown Gasoline

Omaha, Neb.	11.9	4	15.9	16.9	10.25
McCook, Neb.	14	4	18	18	11.75
Norfolk, Neb.	13.75	4	17.75	18.75	10.75
North Platte, Neb.	14	4	18	18	11.5
Scottsbluff, Neb.	14	4	18	18	11.25

Dealer discount: on gasoline off normal s.s. prices: Ethyl 3c; Red Crown 2.5c.

S. O. LOUISIANA

Standard Gasoline	Posted Retail T.W.	Tax	Total Posted Retail T.W.	Posted Retail S.S.	Kerosine T.W.
Little Rock, Ark.	13	6	19	19	11
Alexandria, La.	13	6	19	19	†10
Baton Rouge, La.	13	5	18	18	†10
New Orleans, La.	13	*6	19	19	*12
Lake Charles, La.	13	*6	19	19	†12
Shreveport, La.	13	5	18	18	†12
Lafayette, La.	13	6	19	19	†10
Bristol, Tenn.	13.5	7	20.5	20.5	14
Chattanooga, Tenn.	15	7	22	22	13.5
Knoxville, Tenn.	15	7	22	22	13.5
Memphis, Tenn.	13.5	7	20.5	20.5	11
Nashville, Tenn.	14.5	7	21.5	21.5	13

Blue-Gas (Third Grade)	Tax	Total Posted Retail S.S.	Kerosine T.W.
Little Rock, Ark.	6	15	11
Alexandria, La.	*6	13	†10
Baton Rouge, La.	5	15	†10
New Orleans, La.	*6	16	*12
Lafayette, La.	*6	17	†10
Lake Charles, La.	*6	16	†12
Shreveport, La.	5	14	†12
Bristol, Tenn.	7	18	14
Chattanooga, Tenn.	7	19.5	13.5
Knoxville, Tenn.	7	19	13.5
Memphis, Tenn.	7	16	11
Nashville, Tenn.	7	17	13

Open dealer and tankwagon commercial consumer discounts: on Standard gasoline, 2.5c (beginning Feb. 23, 1932) per gal. off posted retail tank wagon price; 2c on kerosine; no discount on Blue-Gas.

Lease and agency discounts: Esso gasoline, 2.5c; Standard gasoline, 2c; Blue-Gas, 1c, off s.s. price, plus 1c per gal. rental.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine prices in Louisiana include 1c state tax.

MAGNOLIA PETROLEUM

Maximum Mileage Gasoline	T.W.	Tax	Total T.W.	S.S.	Kerosine T.W.
Muskogee, Okla.	11	4	15	17	9
Oklahoma City	11	4	15	17	9
Tulsa, Okla.	11	4	15	17	9
Fort Smith, Ark.	14.5	†4	18.5	18.5	11
Little Rock, Ark.	13.5	6	19.5	19.5	11
Texarkana, Ark.	14.5	4	18.5	18.5	11
Dallas, Tex.	13	4	17	18	10
El Paso, Tex.	12	4	16	18	12
Fort Worth, Tex.	13	4	17	18	9
Houston, Tex.	12	4	16	19	10
San Antonio, Tex.	12	4	16	18	9
Blue Gasoline					
Muskogee, Okla.	11	4	15	15	9
Oklahoma City	9	4	13	13	9
Tulsa, Okla.	10	4	14	14	9
Fort Smith, Ark.	11	4	15	15	11
Little Rock Ark.	9	6	15	15	11
Texarkana, Ark.	9	4	13	13	11
Dallas, Tex.	9	4	13	13	10
El Paso, Tex.	10	4	14	14	12
Fort Worth, Tex.	10	4	14	14	9
Houston, Tex.	9	4	13	13	10
San Antonio, Tex.	9	4	13	13	9

Dealer discounts: on Maximum Mileage gasoline, 2.5c off t.w. price to dealers, thru Arkansas. On Blue gasoline, 1c per gal. off t.w. price to dealers thru territory. Fort Smith and Little Rock kerosine prices are subject to 2c discount off t.w. price.

*In Texarkana, 4c Texas tax applies; out side Texarkana, 6c Arkansas tax applies.

†In Fort Smith, 4c Oklahoma tax applies; outside Fort Smith, 6c Arkansas tax applies.

CONTINENTAL OIL

Conoco Gasoline

Denver, Colo.	13	4	17	20	13.5
Pueblo, Colo.	13	4	17	20	13
Grand Junc., Colo.	15	4	19	22	15.5
Casper, Wyo.	12	4	16	19	11
Cheyenne, Wyo.	11	4	15	18	12.5
Butte, Mont.	17	5	22	25	17
Helena, Mont.	16	5	21	24	17
Salt Lake City, Utah.	14.5	4	18.5	21.5	16
Boise, Ida.	13	5	*18	20	18
Twin Falls, Ida.	14	5	19	22	18
Albuquerque, N. M.	12	5	17	20	14

*Dealer discount: 1c off t.w.

S. O. CALIFORNIA

Standard Gasoline

San Francisco, Cal.	9.5	3	12.5	14.5	12.5
Los Angeles, Cal.	9	3	12	14	12.5
Fresno, Cal.	9.5	3	12.5	14.5	14
Phoenix, Ariz.	9.5	5	14.5	17	†20.5
Reno, Nev.	12	4	16	20	15.5
Portland, Ore.	10	4	14	16.5	13.5
Seattle, Wash.	10	5	15	17.5	13.5
Spokane, Wash.	13.5	5	18.5	21	18
Tacoma, Wash.	10	5	15	17.5	13.5

†Includes 5c state tax.

CANADA

Prices of Imperial Oil Ltd.

(Per Imperial Gallon, which is 1.2 U. S. Gallons)

Imperial Three Star Gasoline	T.W.	Tax	Total T.W.	S.S.	Kerosine T.W.
Hamilton, Ont.	18.5	6	24.5	28	16.5
Toronto, Ont.	18.5	6	24.5	28	17.5
Brandon, Man.	23.5	7	30.5	34	20.5
Winnipeg, Man.	20.5	7	27.5	31	17.5
Regina, Sask.	24.5	6	30.5	34.5	21.5
Saskatoon, Sask.	26.5	6	32.5	36.5	23.5
Edmonton, Alta.	25.5	5	30.5	34	22.5
Calgary, Alta.	22	5	27	30.5	19
Vancouver, B. C.	19	7	26	30	22
Montreal, Que.	18.5	6	24.5	28	17.5
St. John, N. B.	20	7	27	31	22
Halifax, N. S.	20	6	26	30	22

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes.

S. O. NEW JERSEY

Prices in Effect May 30, 1932

Stanavo Aviation Gasoline	T.W.	Tax	Total T W
Newark, N. J.	16	..	16
Baltimore, Md.	16	4	20
Washington, D. C.	16.3	2	18.3

COLONIAL BEACON OIL CO.

Stanavo Aviation Gasoline			
New York City	16	2	18
Boston, Mass.	18	3	21

S. O. PENNSYLVANIA

Stanavo Aviation Gasoline			
Philadelphia, Pa.	15	3	18
Pittsburgh, Pa.	16	3	19
Altoona Pa.	16	3	19
Harrisburg, Pa.	15	3	18

S. O. OHIO

Sohio Aviation Gasoline			
Thru Ohio	15	4	19

Discounts: to airports, 1 to 4c, based on quantity.

S. O. INDIANA

Stanavo Aviation Gasoline			
Chicago	16	3	19
Indianapolis, Ind.	16.3	4	20.3
Detroit, Mich.	16.9	3	19.9
Milwaukee, Wisc.	16.2	4	20.2
Minneapolis, Minn.	17.3	3	20.3
St. Louis, Mo.	15.4	2	17.4
Kansas City, Mo.	16	*3	19
Fargo, N. D.	19	3	22
Huron, S. D.	17.4	4	21.4
Wichita, Kan.	14.9	3	17.9

*Includes 1c city tax.

S. O. LOUISIANA

Stanavo Aviation Gasoline			
Little Rock, Ark.	19	6	25
New Orleans, La.	18	6	24
Shreveport, La.	18	5	23
Chattanooga, Tenn.	21	7	28
Memphis, Tenn.	19	7	26

Dealer and commercial consumer discounts: 2.5c off posted retail t.w.

CONTINENTAL OIL CO.

Denver, Colo.	16	4	20
Cheyenne, Wyo.	16	4	20
Helena, Mont.	19	5	24
Salt Lake City, Utah.	17.5	4	21.5
Albuquerque, N. M.	16	5	21
Boise, Ida.	16	5	21

S. O. CALIFORNIA

Stanavo Aviation Gasoline			
Phoenix, Ariz.	12.5	5	17.5
Los Angeles, Cal.	12	3	15
San Francisco, Cal.	12.5	3	15.5
Reno, Nev.	15	4	19
Portland, Ore.	13	4	17
Seattle, Wash.	13	5	18
Spokane, Wash.	16.5	5	21.5

Note: 4c added to customers taking delivery direct into planes.

(Continued on page 84)

DISTRIBUTORS—DEALERS

You Can't Beat This Pair!

WHITE ROSE GASOLINE

Costs No More Than Regular Gasoline

EN-AR-CO MOTOR OIL

Paraffine Base *Wear Proof*

Write for Contract Details

THE NATIONAL REFINING COMPANY, *Cleveland, Ohio*

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WAX PLANT EQUIPMENT

Filter Presses *Wax Moulding Presses*
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On The Lazy Bench

Free Love—Almost

A man was discovered by his wife one night standing over his baby's crib. Silently she watched him. As he stood looking down at the sleeping infant, she saw in his face a mixture of emotions—rapture, doubt, admiration, despair, ecstasy, incredulity. Touched and wondering alike at this unusual parental attitude and the conflicting emotions, the wife with eyes glistening arose and slipped her arms around him.

"A penny for your thoughts," she said, in a voice tremulous with tenderness.

Startled into consciousness, he blurted them out: "For the life of me, I can't see how anybody can make a crib like that for three forty-nine!"

—The Oil Can
Illinois Petroleum Marketers Association

* * *

"You've heard of Naples, the famous Italian port, haven't you?"

"No, how much is it a bottle?"

—The Gas Line
West Penn Oil Co.

* * *

Twenty Cents Will Help Too

"Will you give ten cents to help the Old Ladies' Home?"

"What? Are they out again?"

—Pure Oil News
The Pure Oil Co.

* * *

"Yes, my boy, I reckon you can have her," sighed old man Hawkins to his daughter's suitor. "But take good keer of her, for she's been riz kinder tender-like. Eight acres is all I ever ast her to plow between sun-up and dark. She can do light work such as well-diggin' and steer brandin', but she ain't used to no rough stuff, so you'll have to be gentle with her."

—The Diamond
Mid-Continent Petroleum Corp.

* * *

It happened in the Adirondacks.

"What," demanded the amateur hunter of his guide, "is the name of the species I have just shot?"

"Well, sair," returned the guide suavely, "I've just been investigating, and he says his name is Smith."

—Texaco Topics
The Texas Co.

* * *

Rumors of bargains caused by the depression brought the hermit to the city. After seeing a sign on the corner, "2 gals 35c" and across the street another sign, "Try Ethel 20c," he returned to the mountains, confused whether it was the depression or a fire sale.

Mike Liles,
O. K. Oil Co., Shreveport.

Crude Oil Prices (in Effect May 30, 1932)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually
(Prices are per barrel at the well; A.P.I. gravity).

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$1.75

(Effective April 25, 1932)

Penna. Grade Oil in Eureka Pipe Lines (West Virginia)..... 1.70

(Effective April 25, 1932)

Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....†1.55

(Effective April 25, 1932)

Corning Oil in Buckeye Pipe Lines (Ohio).... 1.05

(Effective April 26, 1932)

†For Macksburg oil run previous to March 1, 1932, $1.45.

Posted by Other Companies

Tide Water Pipe Co., Ltd.:
Bradford-Alleghany district (Penna. and N. Y.).....$2.02

(Effective April 25, 1932)

*The Pennzoil Co.:
Penna. Grade Oil in National Transit Lines*$1.97

(Effective April 25, 1932)

Ashland Refining Co.:
Somerset Oil in Ashland Lines (Kentucky)..$0.85

(Effective April 26, 1932)

Stoll Oil Refining Co.:
Stoll Pipe Line Oil (Kentucky).....$0.85

(Effective April 16, 1932)

*The Pennzoil Co. posts $1.97 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other districts range down to $1.92 per bbl. at wells.

MICHIGAN

(Posted by Pure Oil Co.)

Midland, Midland County (May 17, 1932)....$0.65

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective April 11, 1932

Wooster.....	$1.25	Princeton.....	$1.10
Lima.....	1.15	Illinois.....	1.10
Indiana.....	0.75	West Kentucky.	1.05

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Nov. 3, 1931

Petrolia, Ont.....$1.90
Oil Springs, Ont.....$1.97

Turner Valley, Alta.:

(Effective April 21, 1932)

40-44.9.....	$1.56	**Naphtha:**	
45-49.9.....	2.18	†Clear.....	$3.32
50 and above....	2.80	†Discolored.....	3.08

†Clear naphtha: 22 color, 10 lbs. vapor pressure, 90% recovery, end point, 410° A.P.I. Discolored naphtha: 90% recovery and 10 lbs. vapor pressure.

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Stanolind Crude Oil Purchasing Co.
(In Oklahoma, Kansas, North and North Central Texas)

(Effective April 11, 1932)

Below 29.....	$0.76	35-35.9.....	$0.90
29-29.9.....	0.78	36-36.9.....	0.92
30-30.9.....	0.80	37-37.9.....	0.94
31-31.9.....	0.82	38-38.9.....	0.96
32-32.9.....	0.84	39-39.9.....	0.98
33-33.9.....	0.86	40 and above...	1.00
34-34.9.....	0.88		

On April 1, 1932, above prices were first posted by Continental Oil Co., followed the same day by Barnsdall, Bartex Pipe Line Co. (Phillips Pet.), Magnolia, Sinclair, Sun Oil, and The Texas Co. April 11, Humble Oil & Refining Co., Gulf Refining Co. and Carter Oil Co. met Carter's schedule having these five lower grades: below 25, $0.68; 25-25.9, $0.70; 26-26.9, $0.72; 27-27.9, $0.74; 28-28.9, $0.76.

Humble's prices are in Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie and Moran, Tex.

East Texas

Magnolia, Sinclair and Texas Co. post $0.98 effective April 1, 1932.

Magnolia Petroleum Co.
(In Oklahoma, North, North Central and Central Texas)

(Including in North and North Central Texas: Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden; in Central Texas: Mexia, Wortham, Corsicana Light and Panola county).

Effective April 1, 1932

Below 28.....	$0.67	28-28.9.....	$0.76

Rest of schedule same as Stanolind, which see above.

Lytton Springs, Tex.....$0.94
Corsicana heavy..... 0.64

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective April 11, 1932

Hutchinson-Carson Counties		Gray County	
Below 35.....	$ .66	.....	$0.76
35-35.9.....	.68	.....	.78
36-36.9.....	.70	.....	.80
37-37.9.....	.72	.....	.82
38-38.9.....	.74	.....	.84
39-39.9.....	.76	.....	.86
40 and above....	.78	.....	.88

April 1, 1932 Magnolia and The Texas Co. first posted above prices.

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective April 11, 1932

Pecos, Winkler, Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., and Lea county, N. Mex.....$0.65

April 1, 1932 Magnolia and The Texas Co. first posted above prices; Magnolia's prices applying in Winkler, Crane, Upton, Howard, Glasscock and Mitchell; Texas Co. posts in Crane, Upton, Winkler and Lea.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective April 11, 1932

Mirando.....	$0.80	Salt Flat.....	$0.75
Darst Creek.....	0.75	Pettus, Bee Cty.	1.00

(Posted by Magnolia Petroleum Co.)

Effective April 1, 1932

Mirando.....	$0.90	Darst Creek....	$0.75
Luling.....	0.64		

NORTH LOUISIANA—ARKANSAS FIELDS

‡Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado Crichton, De Soto, Sabine, Sarepta and Carterville

Effective April 11, 1932

Below 25.....	$0.68	33-33.9.....	$0.86
25-25.9.....	.70	34-34.9.....	.88
26-26.9.....	.72	35-35.9.....	.90
27-27.9.....	.74	36-36.9.....	.92
28-28.9.....	.76	37-37.9.....	.94
29-29.9.....	.78	38-38.9.....	.96
30-30.9.....	.80	39-39.9.....	.98
31-31.9.....	.82	40 and above...	1.00
32-32.9.....	.84		

Smackover.....$0.65
*Urania, La..... 0.60
†Stephens, Ark.:
Below 29.....$0.61
29 and above..... 0.64

*Urania posted by Louisiana Oil Refining Corp.
†Stephens posted by Atlantic Oil Producing Co and Louisiana Oil Refg. Corp.
‡April 1, 1932, The Texas Co. first advanced North Louisiana crude to prices shown above.

April 6, Magnolia advanced Pine Island, Haynesville, Bull Bayou, Cotton Valley, La., El Dorado light, and Rainbow, Ark. to above prices.

*GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective April 11, 1932

Below 25.....	$0.80	33-33.9.....	$0.89
25-25.9.....	.81	34-34.9.....	.90
26-26.9.....	.82	35-35.9.....	.91
27-27.9.....	.83	36-36.9.....	.92
28-28.9.....	.84	37-37.9.....	.94
29-29.9.....	.85	38-38.9.....	.96
30-30.9.....	.86	39-39.9.....	.98
31-31.9.....	.87	40 and above...	1.00
32-32.9.....	.88		

Refugio heavy.....$0.80

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Rabbs Ridge, Raccoon Bend, Refugio light, Sour Lake, Spindletop, Sugarland and West Columbia.

April 1, 1932 The Texas Co. first posted above prices.

J. A. Campbell Co. Is Reorganized

LOS ANGELES, May 24.—Access to one of the most complete machine and plate shops in southern California will be possible by the newly enlarged J. A. Campbell Engineering Corp., following its purchase of assets, patents, good will and production equipment of the J. A. Campbell Co., of Long Beach. The new organization has moved into new quarters at 973 N. Main St., Los Angeles.

The principals in the new company are Henry N. Wade and C. L. Parkhill, both of whom have been with the Campbell company for many years and who are experienced in the design and construction of natural gasoline plant equipment, scrubbers, and other natural gasoline producing equipment.

J. A. Campbell, one of the originators of the bubble-tower principle of gasoline absorption, will be indirectly identified with the new organization. He will devote most of his time, however, to the old location at Long Beach where he will further develop several gas and power specialties.

Stearns-Roger Co., Denver, will continue to sell and make the Campbell absorption plants, Mist-D-Fiers, and other similar equipment.

GREEN BAY, Wis.—Howard Oil Co., Duck Creek, Wis., has opened a new service station in Green Bay. The company handles Tydol products.

Pennsylvania Enlarges Bulk Plant

CLEVELAND, June 1.—Pennsylvania Refining Sales Co. is enlarging its jobbing warehouse and building a service station at 1808 East 22nd St., Cleveland. Storage is being provided for 10,000 gallons of motor oils. Trackage space is provided for handling six cars of oil at once. Office space also is being enlarged. The station is in the automobile sales and service district of the city. It sells only lubricants, no gasoline being offered.

APPLETON, Wis.—Progress Oil Co. has been organized here and has completed building of a bulk plant. The company will distribute Continental Oil Co. products.

March Gasoline Demand Down 2.5% State Tax Reports Show

NEW YORK, May 27 GASOLINE demand, as revealed in state tax reports compiled by the American Petroleum Institute, declined 2.5 per cent in March under March a year ago, as compared with a decline of 3.3 per cent in February, under February a year ago.

Total consumption in March in 47 states and the District of Columbia (exclusive of Kansas), was 1,138,739,000 gallons, a loss of 29,735,000 gallons from March, 1931. For the three months ended March this year, gallonage totaled 3,247,276,000 gallons, compared with 3,293,225,000 gallons in the corresponding period of 1931, indicating a decline of 1.39 per cent this year.

The first quarter this year was one day longer than in 1931. On a daily average basis the drop in gallonage in the first quarter was 2.48 per cent.

Gains in demand were made generally in the northwest, the eastern and Atlantic seaboard states, while declines were registered generally in the middle west, south and southeastern inland states.

Twenty-seven states showed decreases, the largest of which was one of 37.6 per cent in South Dakota. The largest increase was 20.6 per cent in Oregon.

The accompanying table shows detailed figures by states.

Gasoline Consumption by States, March, 1932

(Figures in thousands of gallons)

	Month of		% Change	3 Months Ended With		% Change
	March, 1932	March, 1931	1932 over 1931	March, 1932	March, 1931	1932 over 1931
Alabama	11,729	12,979	— 9.63	33,644	37,055	— 9.20
Arizona	6,332	6,355	— 0.36	17,241	17,561	— 1.82
Arkansas	8,177	8,511	— 3.92	27,321	30,385	—10.08
California	115,761	127,605	— 9.28	318,552	335,802	— 5.14
Colorado	13,330	12,434	+ 7.21	34,855	35,959	— 3.07
Connecticut	17,491	15,989	+ 9.39	48,552	44,285	+ 9.63
Delaware	2,975	2,726	+ 9.13	8,151	7,626	+ 6.88
District of Columbia	7,658	6,994	+ 9.49	22,352	19,529	+14.45
Florida	20,191	22,420	— 9.94	62,012	66,181	— 6.30
Georgia	17,031	17,106	— 0.44	50,116	49,971	+ 0.29
Idaho	2,845	3,923	—27.48	7,817	9,803	—20.26
Illinois	69,881	68,772	+ 1.61	206,375	202,842	+ 1.74
Indiana	36,784	32,604	+12.82	98,672	94,277	+ 4.66
Iowa	26,428	33,609	—21.37	71,520	87,826	—18.57
Kentucky	11,856	12,037	— 1.50	35,130	35,564	— 1.22
Louisiana	13,629	14,069	— 3.13	40,386	41,122	— 1.79
Maine	5,396	4,830	+11.72	15,705	13,154	+19.39
Maryland	14,144	13,464	+ 5.05	40,366	37,451	+ 7.78
Massachusetts	39,876	37,962	+ 5.04	109,547	102,534	+ 6.84
Michigan	52,682	55,099	— 4.39	159,655	157,071	+ 1.64
Minnesota	28,154	29,034	— 3.03	73,577	82,004	—10.28
Mississippi	(a)7,984	8,519	— 6.28	(a)23,950	25,299	— 5.33
Missouri	29,853	31,141	— 4.14	92,925	99,650	+ 6.75
Montana	4,203	5,639	—25.46	10,378	13,890	—25.28
Nebraska	16,087	17,307	— 7.05	40,161	51,336	—21.77
Nevada	1,742	1,470	+18.50	4,507	3,773	+19.45
New Hampshire	3,714	3,310	+12.20	10,465	9,056	+15.56
New Jersey	52,053	50,701	+ 2.67	150,298	140,376	+ 7.07
New Mexico	3,625	3,797	— 4.53	10,109	10,813	— 6.51
New York	101,846	108,802	— 6.39	323,754	299,152	+ 8.22
North Carolina	17,265	18,342	— 5.87	60,116	58,915	+ 2.04
North Dakota	7,563	7,250	+ 4.32	13,628	18,525	—26.43
Ohio	72,227	69,168	+ 4.42	198,036	199,288	— 0.63
Oklahoma	22,395	23,277	— 3.79	63,507	70,048	— 9.34
Oregon	15,293	12,674	+20.66	35,781	34,004	+ 5.22
Pennsylvania	78,136	73,009	+ 7.02	221,948	215,633	+ 2.93
Rhode Island	7,384	7,182	+ 2.81	20,278	18,415	+10.12
South Carolina	8,649	9,741	—11.21	24,661	27,217	— 9.39
South Dakota	7,982	12,793	—37.61	18,530	29,333	—36.83
Tennessee	14,831	16,051	— 7.60	44,519	45,467	— 2.08
Texas	61,249	62,513	— 2.02	169,914	178,225	— 4.66
Utah	3,636	4,609	—21.11	10,606	11,975	—11.43
Vermont	2,414	2,139	+12.86	6,694	6,067	+10.33
Virginia	17,063	16,268	+ 4.89	49,337	46,369	+ 6.40
Washington	21,949	18,349	+19.62	52,843	53,694	— 1.58
West Virginia	8,450	8,296	+ 1.86	24,862	24,166	+ 2.88
Wisconsin	26,510	35,148	—24.58	78,019	87,745	—11.08
Wyoming	2,286	2,457	— 6.96	5,904	6,792	—13.07
Total	1,138,739	1,168,474	— 2.54	3,247,276	3,293,225	— 1.39
Daily Average	36,734	37,693	— 2.54	35,684	36,591	— 2.48
Change from previous year:						
Total Decrease	29,735			45,949		
Percentage Decrease in Daily Average	—2.54%			—2.48%		

(a)—Estimated.

Oil Men Active in Work For Needy Children

ANDERSON, S. C., May 28.—A group of Anderson Kiwanis Club members, among whom are two well known oil jobbers of South Carolina, have been maintaining a clinic at Columbia, S. C., for underprivileged children. Recently the club took under its wing a three-year old boy, "Sonny Boy" Nicholson, of Anderson, who has been suffering from infantile paralysis, preventing him from walking.

Some months ago, Dr. William A. Boyd, of the Columbia clinic, was hired by the club to perform the operation. He had put a cast on the boy's legs when the Kiwanians had discovered the boy during one of its clinics for the needy. The cast was removed the other day and indications are that he will walk within two weeks, according to Frank R. Thompson, president, Anderson Petroleum Co. and chairman of the Kiwanis Club transportation committee of Anderson which arranged for the boy to fly from here to Columbia.

Mr. Thompson is also director of the club and a member of the Underprivileged Children's Committee, being the only lay member of this committee. All others are physicians.

W. J. Keenan, president of the Columbia Petroleum Co., Columbia, and past president of the Columbia Kiwanis Club, was also instrumental in arranging medical treatment for the boy. Both oil companies are Shell distributors.

I. C. S. To Offer Station Management Course

SCRANTON, Pa., May 28.—A course of study in the operation and management of service stations is being arranged by the International Correspondence Schools, Scranton, under the direction of F. G. Klock, according to W. C. Wright, of the school's business service department.

Mr. Klock had been with the Sinclair Refining Co. since 1920, recently in charge of sales promotion and training work for the company, before going with International. The course will be ready for distribution in the early fall, Mr. Wright says.

Crude Oil Prices (in Effect May 30, 1932)

(Prices are per barrel at the well; A.P.I. Gravity)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS
(Posted by Midwest Refining Co.)

Effective April 11, 1932

Salt Creek, Wyo.:

Below 29°	$0.76	32-32.9	$0.84
29-29.9	0.78	33-33.9	0.86
30-30.9	0.80	34-34.9	0.88
31-31.9	0.82	35-35.9	0.90
36-36.9	$0.92	39-39.9	$0.98
37-37.9	0.94	40 and above	1.00
38-38.9	0.96		

Salt Creek prices met by The Texas Co. April 11.

Effective April 11, 1932

Cat Creek, Mont.	$1.20
Hogback, N. Mex.	0.80
Hobbs, N. Mex.	0.65

(Posted by Ohio Oil Co.)

Effective April 11, 1932

Elk Basin, Wyo.	$1.20
Grass Creek Light	1.20
Big Muddy	0.98
Lance Creek	1.15
Rock Creek	1.00
Sunburst, Mont.	1.05

CALIFORNIA CRUDE

††Standard Oil Co. of California
Effective June 19, 1931

Posted by Union Oil Co. of California June 20, 1931

	Signal Hill •Seal Beach •Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canon	Elwood Terrace	Torrance	Richfield	†Whittier †La Habra Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	Athens Rosecrans Dominguez	Santa Paula	Orcutt	‡Ventura Avenue
Gravity																				
14-19.9	$0.65	$0.65	$0.65	$0.65	$0.65		$0.65	$0.65	$0.65	$0.65		$0.55	$0.55	$0.55	$0.55	$0.55		$0.65	$0.55	
20-20.9	.65	.65	.66	.65	.66		.65	.65	.65			.55	.55	.55	.55			.65	.56	
21-21.9	.65	.65	.68	.66	.67		.65	.66	.65	.65			.55	.57	.55	.55		.65	.57	
22-22.9	.65	.66	.70	.67	.68		.66	.68	.65	.65			.56	.59	.55	.55		.65	.59	.58
23-23.9	.67	.68	.72	.68	.70		.67	.70	.65	.66			.58	.60	.55	.55		.65	.61	.60
24-24.9	.69	.70	.74	.69	.72	F.o.b. Ship	.68	.72	.65	.67	$0.65		.61	.62	.55	.55	$0.69	.66	.63	.62
25-25.9	.71	.72	.76	.70	.74		.70	.74	.65	.69	.65		.64	.64	.57	.55	.71	.68	.65	.64
26-26.9	.73	.74			.76					.71	.65		.66	.66			.73	.70	.67	.66
27-27.9	.75	.76			.78					.73	.68		.68	.67			.75	.72		.68
28-28.9	.77				.80					.75	.71		.71	.69			.77	.74		.70
29-29.9	.79									.77	.73		.74	.71			.79	.76		.72
30-30.9	.81									.79	.75		.76	.72			.81	.78		.74
31-31.9											.78						.83			
32-32.9											.80						.85			
33-33.9						$0.79					.83						.87			
34-34.9						.81					.86						.89			
35-35.9						.84					.87									
36-36.9						.87														

Subject to field gathering charge of 5c per barrel.

•Seal Beach and Alamitos Heights prices end with $0.75 for crude 27 and above.

†Whittier and La Habra crude ends with 22-22.9 gravity.

††Postings on Kettleman Hills, Ventura Avenue, Athens-Rosecrans and Dominguez discontinued by Standard. Kettleman Hills, 30 and above, posted at 66 cents by Associated Oil Co. and General Petroleum Co., June 19, 1931.

‡Posted by Associated Oil Co., June 20, 1931.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	May 31	May 23
Soda Ash Light 58% bags, cwt.	$1.15-1.38	$1.15-1.38
Silicate of Soda 60 deg. drums, cwt.	$1.75-1.90	$1.75-1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.70	$0.70
Silicate of Soda 40 deg. drums, cwt.	$1.00	$1.00
Sal Soda wks.	$0.90-1.20	$0.90-1.20
Caustic Soda 76% solid, cwt.	$2.50	$2.50
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	$11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.05	$3.10-4.05
Liquid Chlorine, tank cars, wks, lb.	1.75	1.75

Compounder's Supplies

	May 31	May 23
Vegetable Oils		
Linseed carloads, spot, lb.	6.60	6.60
Tanks, spot	6.00	6.00
Soya Bean, Tank, coast, lb.	5.00-5.50	5.00-5.50
Oleic Acid		
Distilled, tanks, lb.	5.75	5.75
Distilled, bbls, lb.	7.125-7.375	7.125-7.375
Saponified, tanks, lb.	6.00	6.00
Saponified, bbls, lb.	6.75-7.00	6.75-7.00
Lard Oils		
Prime Winter Strained, lb.	8.25	8.75
Extra Winter Strained, lb.	6.00	6.25
Extra, lb.	6.00	6.25
Extra No. 1, lb.	5.50	5.75
No. 1, lb.	5.25	5.50
No. 2, lb.	5.00	5.25
Tallow oil, lb.	6.25	7.00
Neatsfood Oil		
Pure, bbls, lb.	7.75	7.75
Extra, bbls, lb.	5.75	6.00
No. 1, bbls, lb.	5.50	5.75
Cold Pressed, lb.	12.75	12.75
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	30–31	30–31
Light Pressed, tank cars, N. Y., gal.	25–26	25–26
Yellow bleached, gal.	28–29	28–29
Whale, extra winter bleached, gal.	57–58	58–60
Naval Stores		
Steam distilled turpentine, N. Y., gal.	47	47
Steam, distilled turpentine, Savannah, gal.	41	41
Gum turpentine, N. Y., gal.	50	50
Gum turpentine, f.o.b. cars Savannah, gal.	44	44
Wood Rosin, N. Y., bbl.	$4.78	$4.78
Wood Rosin F, Savn'h, bbl.	$4.58	$4.58
Gum Rosin B, N. Y., bbl.	$3.25	$3.25
Gum Rosin B, f. o. b. cars Savannah, bbl.	$2.60	$2.60
Rosin oil, pure, gal.	47–49	47–49
Rosin, oil, compounded, gal.	41–43	41–43
Pine Tar		
Kiln burnt, bbl.	$10.00-11.00	$10.00-11.00
Retort, bbl.	$11.00-12.00	$11.00-12.00
Alcohol		
Denatured Formula 5, in tanks, per gal.	31.4	31.4

OIL STOCKS AND FINANCES

Royal Dutch Reports Fall in Profits; Cuts Crude Output in 1931

NEW YORK, May 28

THE Royal Dutch Co., owner of a 60 per cent interest in the Royal Dutch-Shell group enterprises, reported a profit of 27,916,648.36 florin for 1931, equal at the Dec. 31, 1931, rate of exchange to $11,208,534.32. In 1930 net earnings were $36,516,238.71.

The 1931 earnings permits payment of 6 per cent on the ordinary shares of Royal Dutch Co. after payment of dividend on the preference shares. In 1930 the company paid an interim dividend of 10 per cent and a final dividend of 7 per cent on the ordinary shares. An interim dividend was omitted in 1931.

The Royal Dutch-Shell group produced 20,532,758 metric tons of crude in 1931, compared with 23,980,027 tons in 1930, according to the report of Sir H. W. A. Deterding, general managing director, and J. E. F. de Kok and J. B. Aug. Kessler, managing directors. A metric ton contains approximately seven barrels.

The group's share of world production of crude last year was 10.8 per cent, compared with 12 per cent in 1930. The total world production in 1931 was given in the report as 189,869,151 metric tons; in 1930 199,957,200 metric tons.

The directors pointed out that although production of crude increased in Roumania and Persia the more significant increase was in Russia where production rose from 18,875,300 tons in 1930 to 22,334,700 tons in 1931. The increasing production in Russia was not unnecessary or uneconomic, it was pointed out, but unnecessary and unwanted exports have been made while the internal requirements of the country apparently were not provided for.

Under the five-year plan Russia's requirements are increasing, the directors cited. They pointed to a demand of 243,000 tons of gasoline in 1930 and 435,000 tons in 1931. The estimated demand for 1932 is 870,000 tons. With kerosine the demand in 1930 was 2,190,000 tons and in 1931 2,608,000 tons. The kerosine estimate for 1932 is 3,865,000 tons.

"From these figures," the directors assert, "it is clearly demonstrated that Russia has been suffering in the immediate past years not from overproduction but from serious internal underconsumption, and it is logical to assume when looking at the estimated consumption figures for 1932 that even these largely increased figures do not provide anything like the qauntities of petroleum products that a country of the area and of the population of Russia should under normal working conditions consume.

"It can safely be assumed that a policy of home starvation is one which cannot be indefinitely pursued, and it is rapidly coming to an end; we, in fact, go so far as to say that a normal Russia, industrialized as its ambition points, would require for its own population even more in the way of petroleum products than Russia herself can produce even under the best conditions as might be worked on the known oil resources at her disposal.

"This becomes more urgently necessary even to the producers in Russia when it is considered that within the next year or two a fresh source of supply will be brought into consideration when the Iraq Petroleum Co., in which we have a 23¾ per cent interest, will seek a market in those countries for which their supplies are geographically most suited, and which market will lie in and around the Mediterranean seaboard."

The Royal Dutch directors declare there has been a wrong division of the world's production process. They say the industries of each country (presumably the oil industries so far as their discussion goes) have been developed for each particular country alone and with no intent toward international co-operation. It was with a view of bringing about international co-operation, it is said in the report, that Mr. Kessler came forward last fall with his plan to prevent disjointed production the world over. The plan was revised in March to overcome objections to the first plan which conflicted with United States anti-trust laws.

"It is too early to say yet whether anything constructive will come of this initiative," they say of the Kessler plan, "but otherwise its critics themselves will have to come forward with some practical alternative constructive plan."

Production of the group's operating subsidiaries in 1931 and 1930 by countries was as follows, figures in metric tons:

	1931	1930
Dutch E. Ind.	3,811,902	4,806,640
Sarawak	535,178	701,518
Egypt	284,859	281,997
Roumania	1,119,636	1,034,042
Mexico	1,731,250	1,838,007
Venezuela—		
Caribbean Petroleum Co.	1,755,316	3,072,084
Venezuelan Oil Concessions ..	4,898,792	5,878,186
Colon Oil Corp.	1,028,500	705,261
Trinidad	162,844	128,240
United States—		
Shell Petroleum Corp.	2,707,519	2,873,908
Shell Oil Co.	2,229,156	2,650,164
Argentina	247,806	9,980
Total	20,532,758	23,980,027

The groups curtailment was due not wholly to the shutting in or pinching in of wells but also to a curtailment of drilling, it is pointed out. This drilling curtailment resulted in a reduction of exploitation expense last year.

Because of the termination of the Roumanian conservation arrangement at the end of 1930 that country's recovery of crude increased 16 per cent last year, it is stated. With the increase prices of crude and products fell until Roumanian products were cheaper than equivalent products at Gulf ports, it was pointed out. Hope in the Roumanian situation is seen in the favorable reaction of Roumanian operators to the Kessler plan.

In spite of the withdrawal of the Lago Petroleum Corp. from a crude stabilizing agreement in Venezuela, Royal Dutch-Shell companies continued their curtailment program throughout 1931, the directors stated. The number of drilling strings was reduced from 15 at the beginning of the year to two at the end.

Plan construction and completions in 1931 included a chemical plant at San Francisco; a gas treating plant at Pangkalan Brandan, Dutch East Indies; a sulfuric acid plant at Balikpapan, Dutch East Indies, a 7500-barrel refinery at Mexico City with pipeline leading to it, and a 200-mile pipeline from East Texas to Houston. Work was begun on a new cracking plant at Houston.

The company's balance sheet of Dec. 31 last showed cash in bank of the equivalent of $96,552 at the Dec. 31, 1931, rate of Netherlands exchange. In addition to this cash the company had $10,731,472 short term deposits outstanding, and a cash reserve of $9,293,134 for the 1931 dividends payable this year.

Its investments in the Bataafsche Petroleum Mij., Anglo-Saxon Petro-

leum Co. and Asiatic Petroleum Co. were carried at $125,305,781. Claims on undertakings in which the company is interested, were carried at $138,375,405. Its total assets including $198,692,714 unissued stock were carried at $681,332,143.

Union Oil Co. Successful On Navy Fuel Bids

LOS ANGELES, May 26.—Union Oil Co. of California was successful bidder on 4,949,500 barrels of the 5,211,500 barrels of fuel oil required by the Pacific Coast Navy this year.

On the largest single quantity of 3,500,000 barrels, to be delivered at San Pedro harbor in cargo lots, Union's quotations were 51 cents a barrel for the first 1,000,000 barrels, 52 cents for the next 500,000 barrels, 53 cents for the next 500,000 barrels and 55 cents for the remaining 1,500,000 barrels.

These prices compare with the 48.5 cents successfully bid by Shell Oil Co. for 3,500,000 barrels under the 1931 contract. Shell did not bid on this year's business.

Fuel oil in the new contract is of a bunker "B" specification, with 17 as the minimum gravity. These requirements resulted in higher prices this year.

Associated Oil Co. was second low bidder on parts of the 3,500,000 barrels.

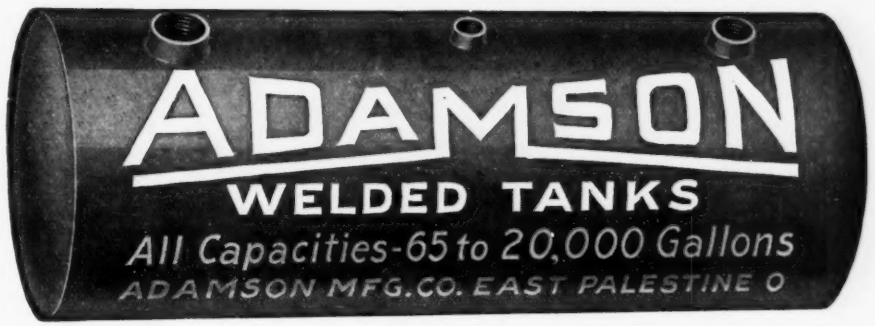
For 100,000 barrels to be delivered to San Francisco under the contract, Union's bid was 54.4 cents a barrel, with Signal Oil & Gas Co. second at 63 cents. Standard bid 89 cents. For 800,000 barrels to be delivered by barge in San Francisco Bay, Union bid 56.4 cents in quantities of 250-5000 barrels or over.

Caminol Oil Buys Plant Seized For Tax Debt

LOS ANGELES, May 27.—Caminol Oil Co., Ltd., independent California refiner, has purchased the 2500-barrel skimming plant, and distribution of the Kettleman Hills Gasoline Co., at Hanford, Calif.

The Kettleman plant, built to run on government royalty oil from the Kettleman Hills North Dome, was recently seized by state authorities for failure to pay about $28,000 in delinquent gasoline taxes.

Caminol has considerable gasoline distribution of its own in the San Joaquin Valley and coastal areas accessible to the Hanford plant which it has supplied by tank truck and trailer from its plant in the Los Angeles Basin.



SKILLED SUPERVISION

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Transactions in Oil Shares on New York Stock Exchange

1931 High	1931 Low	1932 High	1932 Low	Listed Shares	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended May 28 Sales Shares	High	Low	Last	Week's Change
23	11¼	16¼	12	922,075	N.P.	Amerada Corp.	50cQ	Apr. 30, 32	1,800	16	13½	13½	— 2
12⅜	1¼	4	¼	209,180	N.P.	American Republics Corp.	....	.....	.....	....	....	....	....
31	8¾	10⅞	6¾	2,240,000	$25	Associated Oil Co.	25c	Apr. 15, 32	.....	....	....	....	....
23⅝	8⅝	12⅞	8⅝	2,696,652	25	Atlantic Refining Co.	25cQ	Mar. 15, 32	15,100	11½	10⅛	10⅛	— 1¼
14½	4	5⅞	4	2,257,740	5	Barnsdall Corp.	....	May 11, 31	9,200	4¼	4	4⅛	0
25	8	..	..	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	....	....	....	....
10½	7½	10½	9	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	2,200	10½	10	10	— ⅜
15⅝	4⅛	7⅛	4⅛	14,218,835	N.P.	Consolidated Oil Corp.	....	.....	31,000	5⅛	4½	4½	— ½
103	64	96	79	141,294	$100	do pfd.	$2	Feb. 15, 32	1,600	89	86½	87	+ 4
12	5	7	4½	4,722,301	N.P.	Continental Oil Co.	....	.....	14,300	5¼	†4½	4½	— ⅝
47	9⅝	15½	7	413,333	N.P.	General Asphalt Co.	25cQ	Mar. 15, 32	2,000	8⅛	†7	7¼	— 1¼
68½	15¼	24⅜	9¾	96,116	$100	Houston Oil Co.	....	.....	3,400	13	10¼	10¾	— 1½
14⅛	3	5⅛	2	677,019	25	do new.	....	.....	4,600	2¾	†2	2⅜	— ⅛
4⅝	1⅜	1⅝	1	556,546	10	Indian Refining Co.	....	Dec. 15, 20	900	1	1	1	— ⅛
4½	1	1⅝	¾	1,309,036	N.P.	Louisiana Oil Ref'g. Corp.	....	.....	300	1	¾	¾	0
55	20	18	9½	40,000	$100	do pfd.	$1.62½Q	Feb. 15, 32	10	9½	†9½	9½	+ ½
3¾	½	1	⅜	330,000	N.P.	Maracaibo Oil Exploration Co.	....	.....	.....	....	....	....	....
171	50⅞	60	50	459,428	$100	Mexican Petroleum Co.	....	Apr. 20, 31	.....	....	....	....	....
100	100	105	100	120,000	100	do pfd.	$2Q	Apr. 20, 32	.....	....	....	....	....
16¾	5	6½	4	1,857,912	N.P.	Mid-Continent Petroleum Corp.	....	Feb. 16, 31	8,600	5¼	4⅛	4⅛	— ⅞
19½	5⅛	8½	5	6,548,052	N.P.	Ohio Oil Co.	....	Mar. 14, 31	14,000	8¼	7⅞	7⅞	— ⅝
35⅛	20	33	17⅛	1,000,000	$50	Pan American Pet. & Transp. Co.	40cQ	Apr. 20, 32	400	*33	30⅝	33	+ 5
36½	18	34	16	2,474,131	50	do B non-voting	40cQ	Apr. 20, 32	2,800	*34	30½	34	+ ⅞
4¼	⅝	1¼	½	199,370	N.P.	Panhandle Prod. & Ref'g. Co.	....	.....	100	⅝	⅝	⅝	— ⅛
20	5	8	3½	25,666	$100	do pfd.	....	July 2, 23	.....	....	....	....	....
10⅞	2⅛	4⅞	3	2,396,084	N.P.	Petroleum Corp. of America	....	June 1, 31	14,000	3¾	3¼	3¼	— ⅜
16⅜	4	6⅛	3⅛	4,421,910	N.P.	Phillips Petroleum Co.	....	Jan. 2, 31	8,800	4¼	3½	3⅞	— ¼
1½	⅛	½	⅛	1,184,917	$25	Pierce Oil Corp.	....	.....	500	⅜	⅛	⅛	— ⅛
23¾	3½	7¼	3½	150,000	100	do pfd.	....	Feb. 1, 22	400	3⅞	3⅝	3¾	— ⅜
3⅜	½	1⅛	½	2,500,000	N.P.	Pierce Petroleum Corp.	....	Feb. 16, 31	700	⅝	½	⅝	— ⅛
20⅜	4⅛	7⅛	4	2,441,432	$25	Prairie Oil & Gas Co.	....	Mar. 31, 31	200	4⅝	4⅝	4⅝	+ ⅜
26¼	5⅞	9¾	5¾	4,050,000	25	Prairie Pipe Line Co.	....	July 1, 31	900	6⅞	6⅜	6⅜	— ⅞
6	1	1⅝	⅜	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	200	⅛	†⅛	⅛	— ⅛
16	3	9¾	1	56,907	50	do pfd.	....	May 4, 25	.....	....	....	....	....
11⅞	3⅛	5⅛	3⅛	3,038,370	25	Pure Oil Co.	....	Sept. 1, 30	5,400	4	3½	3½	— ½
101½	53½	60½	50	130,000	100	do 8% pfd.	$2Q	Apr. 1, 32	430	54½	50½	54½	+ 2
6⅜	⅜	¾	⅜	2,126,250	N.P.	Richfield Oil Co. (California)	....	Sept. 1, 30	300	½	½	½	0
10¼	1¼	2½	1¾	1,235,815	N.P.	Rio Grande Oil Co.	....	July 25, 30	6,700	2⅛	†1¾	1¾	— ⅜
42⅝	13	23	12½	558,343	$13.40	Royal Dutch Co. (N. Y. shares)	93.85c	Aug. 4, 31	13,400	16	15	15⅛	— 1
20¾	5½	9⅛	6¾	1,244,383	N.P.	Seaboard Oil Co. of Del.	....	Oct. 15, 24	10,400	8¾	7¾	8	— ⅝
34	5	15⅝	8	62,825	£2	Shell Transport & Trading Co.	72.6c	July 23, 31	.....	....	....	....	....
10¼	2½	4⅛	2½	13,070,625	N.P.	Shell Union Oil Corp.	....	June 30, 30	4,900	3	2⅝	3	0
78	15	31	19	400,000	$100	do pfd.	....	July 1, 31	1,300	23⅜	21	21	— 2
11	3½	6	3⅛	869,271	10	Simms Petroleum Co.	....	Sept. 15, 30	1,300	4	3⅝	3¾	— ¼
12⅞	2	4½	2½	1,000,000	25	Skelly Oil Co.	....	Dec. 15, 30	500	3⅛	3	3	— ¼
62	10	19	12	120,000	100	do pfd.	....	May 1, 31	300	18½	18	18	— ¼
21	8⅜	10⅜	6⅞	31,764,443	25	Socony Vacuum Corp.	25cQ	Mar. 15, 32	49,800	8¼	†6⅞	7	— 1¼
106	87½	91½	83	764,935	100	S. O. Export Corp. pfd.	$2.50S.A.	Dec. 31, 31	1,100	84¾	83	83¾	— ¼
51¾	23⅛	27¼	16¾	13,102,900	N.P.	S. O. California	50cQ	Mar. 15, 32	21,100	19¼	17½	17¾	— ¾
19	7¾	12⅜	7	320,000	$25	S. O. Kansas	....	Mar. 16, 31	1,100	7½	7	7¼	— ⅝
52½	26	31½	19⅞	25,735,466	25	S. O. New Jersey	††25cQ	Mar. 15, 32	129,200	25⅛	23¾	24	— ⅜
45¼	26¾	32	24¾	1,544,365	N.P.	Sun Oil Co.	25cQ	Mar. 15, 32	800	27	26	26½	— ¼
104½	75	73¾	70	100,000	$100	do pfd.	$1.50Q	Mar. 1, 32	20	73¾	72½	72½	— 1¼
1¾	¼	3	¼	776,979	N.P.	Superior Oil Corp.	....	.....	900	⅜	⅜	⅜	0
35⅞	9⅛	13⅛	10	9,851,236	$25	The Texas Corp.	25cQ	Apr. 1, 32	33,300	11⅛	10	10	— ⅞
6½	1⅞	2⅜	1½	930,454	10	Texas Pacific Coal & Oil Co.	....	Dec. 31, 29	1,400	2	1⅞	2	0
9	2⅛	3½	2	5,998,086	N.P.	Tide Water Associated Oil Co.	....	Feb. 16, 31	11,200	2½	2¼	2¼	0
68	20⅛	30⅜	20	695,494	$100	do pfd.	$1.50Q	Apr. 1, 32	500	29¼	29	29	+ ¼
18	9⅞	9	5⅛	2,191,954	N.P.	Tide Water Oil Co.	25cQ	Mar. 31, 32	300	5⅛	†5⅛	5⅛	— 2
83	30	41	30	199,446	$100	do pfd.	$1.25Q	Feb. 15, 32	200	38	37	37	— 1
26⅝	11	13⅞	9	2,225,302	25	Union Oil Co. California	35cQ	Feb. 10, 32	5,600	9½	9	9⅜	+ ⅛
25⅛	16	19¼	12	1,254,048	N.P.	Union Tank Car Co.	40cQ	Mar. 1, 32	1,500	13¼	12½	12¾	— ¼
7¾	⅞	1½	½	769,531	N.P.	Warner Quinlan Co.	....	July 3, 30	500	¾	†½	¾	+ ⅛
9⅝	2¾	5¾	2¾	428,967	5	H. F. Wilcox Oil & Gas Co.	....	May 10, 28	3,200	3¾	3	3⅜	— ⅛

•New high. †New low. ††Also extra—S. O. New Jersey 25c. Total sales 446,860

Oil Trademarks For Copyright

THE following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Munsey Building, Washington, D. C., trademark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"MOTHER PENN," in red and blue, and picture of old woman's head. Ser. No. 324,064. Dryer, Clark & Dryer Oil Co., Oklahoma City, Oklahoma. For motor lubricating oil.

"ROLL-O-MILES." Ser. No. 325,959. Quaker State Oil Refining Company, Oil City, Pa. For mechanical device on which to record oil servicing for vehicles.

"BEARCAT," and picture of a black cat. Ser. No. 324,334. Aiken and Mascho, Dallas, Tex. For preparation for increasing the efficiency of gasoline and for removing carbon from internal combustion engines or gasoline compounds.

"OIL CREEK," and picture showing a creek, oil well, building, etc. Ser. No. 322,725. Oil Creek Refining Co., Titusville, Pa. For gasoline, naphtha, kerosine, motor fuel oil, furnace oil, steam refined cylinder oils, light and heavy machine oils, motor and tractor oils, paraffin wax, and a general line of light and heavy lubricating oils for all purposes.

"MAXOL." Ser. No. 324,937. The Pennzoil Company, Los Angeles, Calif. For lubricating oils and greases. The trade-mark consists of a yellow band between 2 bands of black on the sides of containers. Ser. No. 325,297. The Pennzoil Company, Los Angeles, Calif. For lubricating oils and greases.

"GERMOIL." Ser. No. 310,105. Continental Oil Company, Ponca City, Okla. For lubricating oil.

"GERMOL." Ser. No. 310,106. Continental Oil Company, Ponca City, Okla. For lubricating oil.

Tank Wagon Price Changes

(Continued from page 77)

Naphtha Prices

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	11.7	13.7	15.2
Detroit	14.5	16	16.8
Kansas City	†13	†14.5	†15.3
Milwaukee	*17.5	*19	*19.8
Minneapolis	**17.8	**19.3	**20.1
St. Louis	12.7	14.2	15
New York	...	14	17
Boston	...	17	17
Philadelphia	...	15	....

•Includes 4c state tax. †Includes 1c city tax.
••Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York Harbor	9.00
Philadelphia district	9.00
Providence	9.50
Tank Wagon or Steel Barrels	
New York City	14
Syracuse	17
Rochester	15
Buffalo (net price)	14
Providence	16
Boston	18
Bridgeport	16
Newark	14
Philadelphia	15
Lancaster	17–18
Altoona	17–18
Baltimore	16

Note: 2c off above t.w. prices to large buyers in some instances.

Cities Service Companies Suspend Dividends

NEW YORK, May 28.—Cities Service Co. and four of its affiliated and subsidiary companies have suspended dividends. The four affiliated companies are the Cities Service Light & Power Co., Empire Gas & Fuel Co., Louisiana Oil Refining Corp. and Arkansas Natural Gas & Fuel Corp. The latter two suspended preferred stock dividends. They had not paid dividends on their common stocks for some time.

Henry L. Doherty, head of the Cities Service organization, said it was deemed advisable to suspend the dividends as it was impossible to sell securities to finance necessary development and expansion. He said improvement in the oil subsidiaries was in prospect for 1932 but that earnings of the public utilities subsidiaries probably would be less than the 1931 earnings.

Cities Service Co. has approximately 650,000 stockholders. It had been paying monthly dividends of 2½ cents and ½ per cent in stock on the common, 50 cents a share on the preferred and preference BB stock and 5 cents a share on the preference B stock. The last dividends are to be paid June 1.

The company has twice before suspended dividends, once after the outbreak of the war in 1914 and again in the depression of 1921. In the latter instance scrip was issued and later redeemed.

As a result of the suspension Cities Service stocks and bonds tumbled in the markets. The common stock reached a low of $1.25 a share May 28. It closed the week at $1.875 a share. In 1929 the stock reached a high of $68.50 a share. The $100 preferred stock sold down to $10 a share and close May 28 at $14.75 a share, a decline of $15.25 a share from the previous day's close. A 100-share block of the $10 par preference B stock sold at $2.50 a share.

Cities Service at the end of April has $28,000,000 in cash, and bank loans amounting to $56,000,000. At the end of 1931 it has approximately $42,000,000 in cash and $68,750,000 in bank loans and notes payable. The only security maturities the organization has maturing this year is $35,000,000 of Toledo Light & Power Co. bonds Dec. 1.

After a decline over many months since the depression set in, Cities Service earnings turned upward this year and were slightly better each succeeding month. The upturn in crude oil and gasoline prices since April 1 has aided the company materially.

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Standard Oil Stocks on New York Curb Market

1931 High	1931 Low	1932 High	1932 Low	Shares Issued	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended May 28 Sales Shares	High	Low	Last	Week's Change
16	6	6¼	6	40,000	$25	Borne Scrymser Co.	....	Oct. 15, 30	400	6	6	6	0
56	30	35	24⅛	200,000	50	Buckeye Pipe Line Co.	$1Q	Mar. 15, 32	.....	....	....	....	....
129½	75	90	55	120,000	25	Chesebrough Mfg. Co.	††$1Q	Mar. 31, 32	300	56	†55	55	— 7
3½	1⅝	2½	1¾	5,977,873	N.P.	Creole Petroleum Co.	....	.....	10,600	2¼	2⅛	2⅛	— ⅛
36	19	32	23	50,000	$100	Eureka Pipe Line Co.	$1Q	May 2, 32	.....	....	....	....	....
72	44¼	49	36⅝	2,974,645	25	Humble Oil & Refg. Co.	50cQ	Apr. 1, 32	6,300	39½	†36⅝	36⅝	— 2⅞
18½	7⅜	9½	6⅝	26,557,496	N.P.	Imperial Oil Corp. coup.	12½cQ	Mar. 1, 32	2,800	7⅞	6¾	6¾	— 1¼
18	7⅛	9⅜	6⅞	.....	N.P.	do registered	12½cQ	Mar. 1, 32	100	7⅝	†6⅞	6⅞	— ⅞
21¼	5½	7½	3	300,000	$10	Indiana Pipe Line Co.	25cQ	Feb. 15, 32	300	3½	3½	3½	0
15½	7⅜	10⅝	8⅜	14,247,088	N.P.	International Petroleum Co.	25cQ	Mar. 15, 32	18,800	10⅜	8⅞	8⅞	— 1½
17½	5	10½	6⅞	509,000	$12.50	National Transit Co.	25cQ	Mar. 15, 32	300	8⅝	8⅝	8⅝	— ¼
14½	5⅞	4	2⅞	100,000	5	New York Transit Co.	10cQ	Apr. 15, 32	300	3¾	3	3⅝	— ½
35½	20	4½	3	120,000	10	Northern Pipe Line Co.	$1.50S.A.	Jan. 2, 32	300	4	3⅞	3⅞	— ⅛
102⅞	67½	76¼	60	580,668	100	Ohio Oil Co. pfd.	$1.50Q	Mar. 15, 32	100	65½	65¼	65¼	— 4¾
15½	5½	6⅜	4	400,000	25	Penn Mex. Fuel Co.	50c	Oct. 31, 31	.....	....	....	....	....
17	7	10	8	100,000	10	Southern Pipe Line Co.	50cQ	Mar. 1, 32	.....	....	....	....	....
23⅞	9¼	14½	9⅝	1,200,000	25	South Penn Oil Co.	25cQ	Mar. 31, 32	1,700	12½	12⅛	12⅜	+ ⅛
42½	25	37	29	35,000	50	South West Pa. Pipe Lines	$1Q	Apr. 1, 32	.....	....	....	....	....
38½	13½	19¼	13⅛	16,996,596	25	S. O. Indiana	25cQ	Mar. 15, 32	39,800	18⅞	16⅞	17	— 1½
23⅜	12⅛	15⅞	10	2,606,983	10	S. O. Kentucky	40cQ	Mar. 31, 32	4,200	11⅛	10⅛	10⅜	— ⅜
36½	16	19	10½	190,822	25	S. O. Nebraska	50cQ	Mar. 21, 32	300	10¾	10¾	10¾	+ ¼
62½	23	28⅛	15½	120,000	25	S. O. Ohio	62½cQ	Apr. 1, 32	350	24	23	23	— 2
115¼	78½	85	80	34,158	100	do 5% pfd.	$1.25Q	Apr. 15, 32	.....	....	....	....	....
10	1	2	1¼	.....	25	Swan Finch Oil Corp.	....	Jan. 15, 32	.....	....	....	....	....

*New high. †New low. ††Also extra—Chesebrough 50c.

Oil and Royalty Stocks on New York Curb

1931 High	1931 Low	1932 High	1932 Low	Par Value	Company	Transactions Week Ended May 28 Sales Shares	High	Low	Last	Week's Change
1¾	¼	⅝	¼	N.P.	American Maracaibo	2,100	½	3/8	3/8	— 1/8
6½	1⅛	2¾	⅞	N.P.	Arkansas Nat. Gas	400	1⅛	†⅞	⅞	— 1/4
6¼	1⅛	2⅝	½	N.P.	do A	7,200	1⅛	†½	½	— ½
7	3⅞	5½	3	$10	do pfd.	1,300	3⅝	†3	3	— ¾
1	½	⅛	⅛	N.P.	Atlantic Lobos	.....	....	....	....	....
3¼	¼	⅝	⅝	$50	do pfd.	100	⅝	⅝	⅝	0
16⅞	6¼	9¾	7¼	N.P.	British Amer. Oil coup.	300	7¼	†7¼	7¼	— ⅜
16¾	10	..	..	N.P.	do registered	.....	....	....	....	....
2⅝	¼	⅝	¼	$¼	Carib Syndicate	300	3/8	¼	¼	— 1/4
20¾	5	6⅞	1¼	N.P.	Cities Service	63,700	3⅞	†1¼	1⅞	— 1/8
84¾	35⅜	53⅜	10	$100	do pfd.	2,500	35	†10	14¾	—16¾
7½	4	4½	2½	$10	do pref. B	100	2¾	2½	2½	— ⅛
84	41½	45	21	100	do pref. BB	90	25	†21	21	— 4
3⅛	¼	⅝	⅜	N.P.	Colon Oil Corp.	100	⅜	⅜	⅜	— 1/8
7⅛	1	1⅞	½	N.P.	Columbia Oil & Gas vtc.	600	⅝	†½	½	— 1/8
2¾	1	1⅜	1	$1	Consolidated Royalty	100	1	1	1	— 3/8
3¾	⅜	1	¼	N.P.	Cosden Oil	700	3/8	†¼	¼	— 1/4
15	1	2	2	$100	do pfd.	.....	....	....	....	....
⅝	⅛	½	⅛	N.P.	Crown Central Pet.	.....	....	....	....	....
5	1¾	2½	1⅝	N.P.	Darby Petroleum	200	2½	2⅛	2⅛	— 3/8
6	1½	2⅛	1⅜	N.P.	Derby Oil & Ref'g.	300	1½	†1⅜	1⅜	— 1/8
40½	25	24½	13¼	N.P.	do pfd.	.....	....	....	....	....
76	25⅛	35⅞	25⅝	$25	Gulf Oil Corp.	4,700	30⅞	28⅛	29	— ½
9¾	9¾	..	..	N.P.	Honolulu Oil Corp.	.....	....	....	....	....
16⅞	4¼	4½	2½	N.P.	Indian Ter. Ill'g. Oil A.	100	2½	2½	2½	0
16⅞	5	4½	2½	N.P.	do B	100	2½	†2½	2½	— ¼
⅜	⅛	¼	⅛	$5	Intercontinental Pet.	300	⅛	⅛	⅛	0
1⅞	¼	⅝	⅜	N.P.	Kirby Petroleum	.....	....	....	....	....
1½	¼	½	⅛	$25	Leonard Oil Devel.	.....	....	....	....	....
6¾	1½	2¼	1⅛	N.P.	Lion Oil Refining	300	2⅜	†1⅛	1⅛	— ½
29	5½	9¼	3⅝	N.P.	Lone Star Gas	4,700	4⅛	3¾	4	0
½	⅛	..	..	$25	MacMillan Petroleum	.....	....	....	....	....
1¾	⅛	⅛	⅛	1	Magdalena Syndicate	.....	....	....	....	....
5	1⅞	6⅛	3¾	N.P.	Margay Oil Co.	.....	....	....	....	....
4¾	1½	2	2	N.P.	Mexico-Ohio Oil	.....	....	....	....	....
8⅛	1¾	2	½	N.P.	Michigan Gas & Oil	100	¾	¾	¾	0
4⅝	⅞	2⅛	⅛	N.P.	Mid. States Pet. A v.t.c.	100	⅞	⅞	⅞	0
1½	¼	½	¼	N.P.	do B v.t.c.	.....	....	....	....	....
11	⅝	2⅛	⅛	$5	Missouri-Kansas P.L.	300	¼	¼	¼	+ 1/8
⅝	⅛	⅛	⅛	1	do B v.t.c.	.....	....	....	....	....
½	⅛	⅛	⅛	1	Mountain & Gulf	.....	....	....	....	....
5⅛	2	3¼	2⅛	10	Mountain Producers	1,800	*3¼	2⅜	2⅜	— 1/4
26½	9¾	13½	9¾	N.P.	National Fuel Gas	4,200	10⅞	†9¾	9¾	— ⅞
1½	¾	¾	⅝	$5	New Bradford Oil	.....	....	....	....	....
2⅛	¾	..	..	10	New England Fuel	.....	....	....	....	....
6½	6½	..	..	10	North Amer. Oil	.....	....	....	....	....
3¼	1⅛	1	⅝	N.P.	North Central Texas	100	¾	¾	¾	— 1/4
2⅛	¼	⅝	¼	N.P.	North European	.....	....	....	....	....
5	⅝	1	¾	N.P.	Oil Stocks, Ltd. A	.....	....	....	....	....
4½	2	..	..	N.P.	do B	.....	....	....	....	....
15	2⅛	6¼	3¾	N.P.	Pacific Western Oil	600	3⅞	3⅞	3⅞	+ 1/8
½	⅛	⅜	⅛	N.P.	Pandem Oil	200	⅛	⅛	⅛	+ 1/16
2	⅜	½	¼	N.P.	Pantepec of Venezuela	200	⅜	¼	¼	0
19	6	7¾	6	$5	Plymouth Oil	300	6⅛	6	6	— 3/8
4½	¼	⅝	¼	N.P.	Producers Royalty	.....	....	....	....	....
83½	49⅞	49½	44	$100	Pure Oil 6% pfd.	.....	....	....	....	....
2½	⅝	1	1	N.P.	Red Bank Oil	.....	....	....	....	....
2½	¼	½	¼	N.P.	Reiter-Foster Oil	200	¼	¼	¼	0
11	¼	1	⅜	$25	Richfield Oil pfd.	.....	....	....	....	....
6½	1¼	1½	1¼	N.P.	Root Refining pfd.	.....	....	....	....	....
3¾	½	½	½	$10	Royalty Corp. pfd.	.....	....	....	....	....
3	¾	1¼	¾	N.P.	Ryan Consolidated	.....	....	....	....	....
1⅜	⅛	½	⅛	$10	Salt Creek Consol.	200	½	½	½	+ 1/8
7⅝	2¾	4⅛	3⅛	10	Salt Creek Prod.	1,600	3⅞	3⅛	3⅛	— ¾
7	1	1¼	1	25	Shreve. El Dorado P.L.	.....	....	....	....	....
7½	3½	3⅝	3	N.P.	Southland Royalty	2,000	3	3	3	— 1/4
5¾	¼	½	¼	$5	Sunray Oil	.....	....	....	....	....
12⅞	2½	6⅝	4½	N.P.	Texon Oil & Land	900	5	4⅞	4⅞	+ 1/8
24½	9½	12	8	$25	Union Oil Associates	100	8	8	8	0
1⅛	⅛	½	1/16	5	Venezuela Petroleum	700	⅛	1/16	1/16	— 1/16
3½	1⅛	2	1¼	1	Woodley Petroleum	.....	....	....	....	....
2¼	¼	½	⅛	N.P.	Y Oil & Gas	900	⅛	⅛	⅛	— 1/16

*New high. †New low.

New York Bonds

Week Ending May 27

	High	Low	Last	Change
Asso. Oil Gold 6s	97¾	97⅝	97¾	0
Atlantic Refg. deb. 5s	94	91½	91½	—2½
Cal. Pet. 5½s	80½	80	80½	0
General Pet. 5s	100½	99¾	100	— ¼
Humble Oil & Refg. 5s	98¾	97	97	—1¼
Humble Oil & Refg. 5½s	100½	100⅜	100½	— ⅛
Pan Amer. P & T 6s	101⅝	101½	101½	— ⅛
Phillips Pet. 5¼s	55¼	52½	52½	—2½
Pure Oil 5½s	74	71⅝	71⅝	—2⅜
Pure Oil 5½s	71	70	70	— ¼
Shell Union Oil 5s	61¾	58¼	60	—2
Shell Union Oil 5s with war.	62	58½	59¼	—1¾
Sinclair Con. Oil 7s	87½	86	87	+ ⅛
Sinclair Con. Oil 6½s	84½	84½	84½	0
Sinclair Con. Crude 5½s	99⅜	99⅛	99¼	0
Sinclair Pipeline 5s	95¾	95⅜	95½	0
Skelly Oil 5½s	58	56¾	56¾	—1
S. O. N. J. 5s	101	99¾	100	—1
S. O. N. Y. 4½s	87	83	83	—3½
Union Oil of Calif. 6s A	95¾	89¾	94	—1¼
Union Oil of Calif. 5s C	93⅜	92	93⅜	—3⅛
Union Oil of Calif. 5s war.	70¼	70	70	—3¼
Warner-Quinlan 6s	18¼	15½	15½	—2⅞
White Eagle Oil 5½s war.	100½	100	100	— ¼

New York Curb Bonds

Week Ending May 27

	High	Low	Last	Change
Beacon Oil 6s '36	92	92	92	—3
Cities Serv. 5s '50	38½	17	20	—12½
Cities Serv. 5s '66	29½	16	20	—8¾
Cities Serv. G. 5½s '42	39½	34½	36	—3½
Cities Serv. G. P. 6s '43	55	51	51¼	—3½
Cont. Oil 5¼s '37	83⅛	82½	82¾	—2¼
Empire O & R 5½s '42	33½	26	27¾	—5¾
Gulf Oil 5s '37	92¾	92	92½	+ ½
Gulf Oil 5s '47	86	85	85¾	—1¼
Indep. Oil 6s '39	79½	78	78	—3¼
Sun Oil 5½s '39	90	89½	90	0

Pittsburgh Stock Exchange

Transactions Week Ended May 27, 1932

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas	210	1¼	1	1¼	+ ¼
† do pfd.	273	3¾	3½	3¾	— ¼
††Columbia Gas & Electric	2,200	7⅞	6½	6⅞	—1
Devonian Oil	250	4¾	4¾	4¾	+ ¼
Lone Star Gas	3,924	4⅛	3⅞	4	— ¼
*Western Public Service	1,535	3	2¾	3	0

†New low record; ‡Payable in new 5 per cent preferred stock; *Unlisted.

New Equipment

AMONG the new items in bulk plant equipment offered by Buckeye Iron & Brass Works, Dayton, are single and double swing joints made with galvanized malleable iron body and packing gland and cast bronze nipples. The design of the body with its ribbed sides gives greater tensile strength with less weight, the company says.

The packing area is exceptionally large and Buckeye special grade packing is used. An equal distribution of pressure on the packing is insured by three gland bolts with a strong steel spring on each bolt. The malleable iron body and gland are galvanized to prevent rust.

The company also makes swing joints in all bronze. Features of these are ribbed body to give strength, full length pipe threads and wrench lugs cast on the body for holding while pipe is being connected, large packing area and a special packing nut locked by two set screws.

* * *

TWO new fire extinguishers, developed with improvements to give them greater strength, more fire-killing power, greater reliability and longer life, have been put out by the American-LaFrance and Foamite Corp., Elmira, N. Y. They are known as the Foamite Crusader and the "Childs" Model DS.

The principal improved feature in both new models is the "monotype" construction, the entire dome and shell being drawn from a single sheet of special alloy claimed to be stronger and of higher ductility than copper.

Under actual tests these extinguishers have an ultimate bursting pressure 30 per cent higher than ordinary fabricated extinguishers, the manufacturer says.

* * *

A WEATHERPROOF enamel floodlight, called the Mobilite, has been placed on the market by The Benjamin Electric Mfg. Co., Des Plaines, Ill.

It is portable, mounted on a free-rolling, three-wheeled truck. It can be rolled under the car for automobile repairing and can be used in greasing pits, under auto lifts and in changing tires at night. The floodlight reflector directs the maximum light where it is most needed and shields the eyes from the glare of the lamp.

* * *

AN ILLUMINATED electric advertising clock has been invented by W. B. Holmberg of West Allis, Wis., for installation on gasoline pumps. The clock globe may be installed on any standard pump in place of the present advertising globe. The inventor believes that the clock in combination with the advertising will call

more attention to the trademark than the usual advertising alone.

* * *

DROPPING automobile tires out of an airplane is the way the Pharis Tire & Rubber Co., Newark, O., tests the Pharis Roadgripper for strength and quality. Recently, a 28 by 4.75 tire was dropped from a plane at 2000 feet and it landed undamaged, according to Carl Pharis, general manager.

* * *

PRODUCTION of the Daniel orifice fitting, in which several important improvements have been made, is now under way by the J. A. Campbell Co., Long Beach, Cal. It is claimed the plate can be changed and inspected in from one to three minutes, regardless of line pressure. A one-speed wrench performs all operations, making for simpler control. The plate operating mechanism is said to be so powerful a 1000-pound pull is exerted by a turn of the speed wrench.

* * *

A NEW distributor for hydraulic valve systems which permits of any combination that may be required in unloading gasoline from a tank truck, has been developed by Shand & Jurs Co., Berkeley, Cal.

It is a simple device, occupying a minimum amount of space, permitting fluid from the hydraulic operator to be distributed in any quantity of valves within the compartments. If, on a six-compartment truck, it is desired to open only the valve from a single compartment, or open all six at one time, both can be done just as easily.

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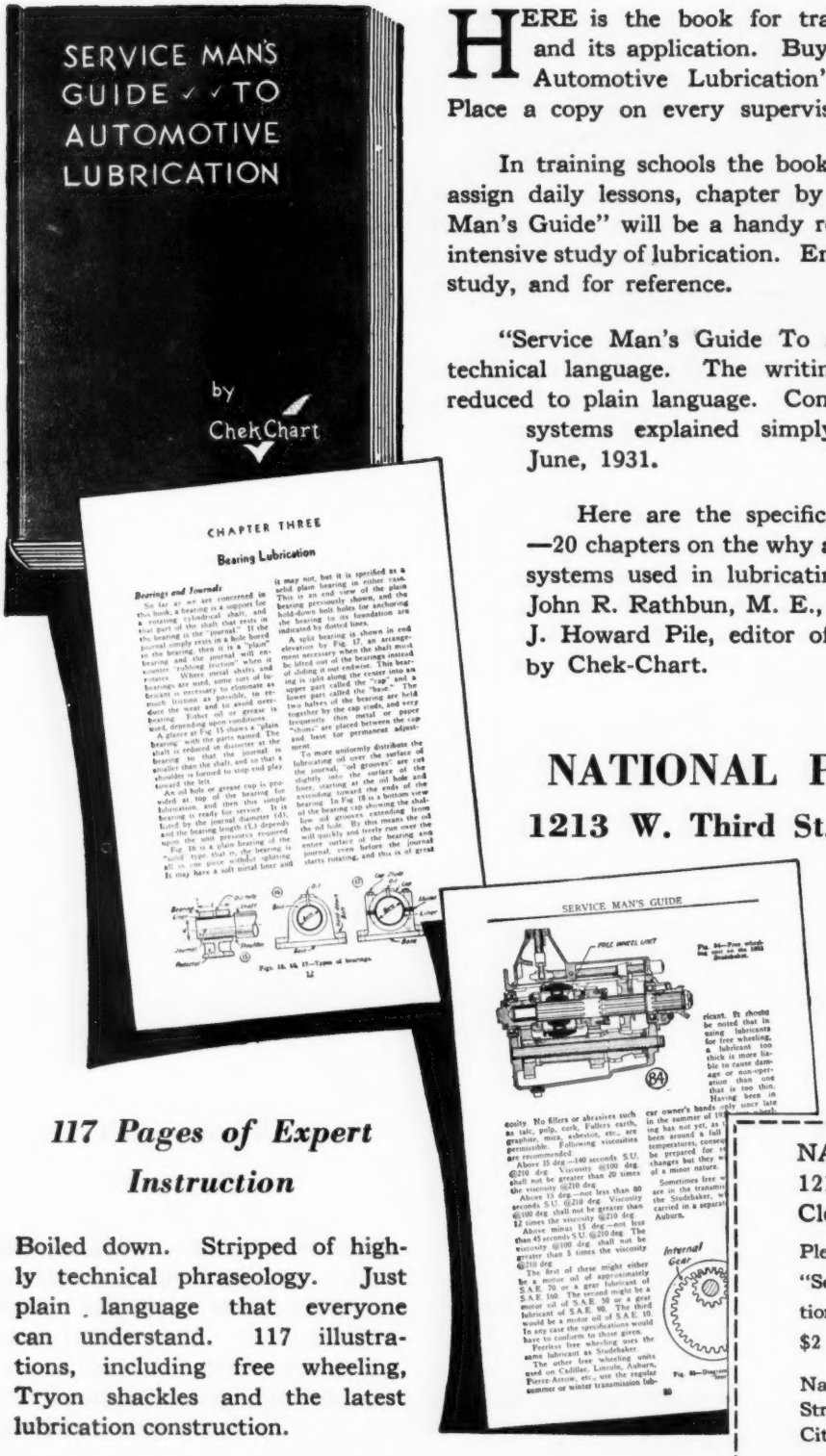

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